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THE UNIVERSITY PUBLICATIONS

NEW SERIES, No. 3

ANNUAL REPORTS
OF
THE PRESIDENT AND THE TREASURER
OF
HARVARD COLLEGE
1900—01



CAMBRIDGE, MASS.

Published by Harvard University

JANUARY 25, 1902

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PRESIDENT'S REPORT FOR 1900-01.

TO THE BOARD OF OVERSEERS:—

The President of the University has the honor to submit the following report for the academic year 1900-01,—namely, from September 27, 1900, to September 26, 1901.

Edward William Hooper, a member of the Board of Overseers since the election of 1900, died on the 25th of June, 1901, in the sixty-second year of his age. He was Treasurer of the College from 1876 to 1898; and during that period—a difficult and perturbed one, on the whole, for investors—increased the property of the University by at least a million and a quarter of dollars, exclusive of gifts. At the time of his resignation, the President and Fellows put on record their high opinion of his financial judgment and of his disinterested services. Mr. Hooper had been only a short time an elected member of the Board of Overseers, but he was thoroughly familiar with its methods, because of his long ex-officio membership as Treasurer of the University. His election by the Alumni so soon after his retirement from the Corporation was a gratifying expression of their confidence and respect.

John Fiske, another member of the Board of Overseers, died July 4, 1901, in the sixtieth year of his age. Mr. Fiske's first official connection with the University was as University Lecturer on the Positive Philosophy, 1869-71, and Instructor in History during the second half of 1869-70; from 1872 to 1879 he was Assistant Librarian; during 1895-96 he was Lecturer on Campaigns of the Civil War West of the Alleghanies; during 1896-97 he was Lecturer on Colonial Virginia and the other Southern Colonies; and he was three times elected to the Board of Overseers,—first in 1879, for a second time in 1885, and for the third time in 1899. Although Mr. Fiske very rarely attended the meetings of the Board, the Alumni

were glad to elect him three times a member, as a tribute to his admirable qualities as lecturer and author. The position of Assistant Librarian was not a congenial one, demanding too great an amount of steady application to routine labors; for Mr. Fiske was an intense and spasmodic worker. As a lecturer and instructor for two years of his early life, he was interesting and inspiring; and the short courses of lectures which he gave in 1895-97 were in the highest degree graphic and stimulating. All his writings were characterized by a clear and fluent style which carried his thought without effort to the minds and hearts of his readers. In the early part of his career as a writer, he was erroneously supposed to be a materialist: he was, in fact, an idealist, as his later works abundantly demonstrated.

Charles Carroll Everett, Bussey Professor of Theology and Dean of the Divinity School, died in Cambridge on the 16th of October, 1900, in the seventy-second year of his age. He had held his professorship since 1869, and had been Dean since 1878. During his long term of service, the Divinity School, which previously had been resorted to almost exclusively by Unitarians, became the resort of students connected with many different denominations. His lectures on theology were always followed with eagerness and delight by students of a great variety of beliefs and denominational affiliations; for he treated his subject in an original way, and in a spirit at once candid, impartial, and comprehensive. In the later years of his service, he also gave very interesting instruction in comparative religion, making this subject contribute to his exposition of the foundations of religion. During the period of his service as Dean, serious changes were made in the policy of the School: the Faculty was enlarged, and was made to represent several denominations; the tuition fee was raised to the level of that of other Cambridge departments of the University; the degree of Bachelor of Arts was required for admission as a candidate for the degree in theology; and the giving of beneficiary aid was restricted, and made to depend on proved merit. These changes were of the gravest character, and all of them except the first were restrictive; they tended to diminish the number of students in the School, while improving their quality. The

attempt to train young men for the ministry of many Protestant denominations, including the Unitarian, was a unique undertaking, which might well have looked formidable to the executive officer of the School. The rise and growth of the Graduate School in Arts and Sciences also affected materially the relations of the Divinity School to the ministry and to the public. Through all these changes the good influence of the Dean was strongly felt, and his high reputation as a religious philosopher and teacher was more and more valuable to the School.

The resignation of Professor Langdell, the second Founder of the Law School, was accepted by the Corporation on the 9th of October, 1900; and he was at once chosen Professor Emeritus. The Corporation entered on their records the following minute:—

“In accepting the resignation of Professor Langdell and electing him Dane Professor Emeritus, the Corporation desire to put on record their appreciation of his unique services. He has been Professor of Law for thirty years, a term of service much longer than the Law School enjoyed from any of his predecessors; he was the first Dean of the Law School, and was Dean for twenty-five years during a period of fundamental reconstruction; he originated a method of teaching law which has proved to be a radical improvement of great value and wide application; finally, he has taught law by voice and pen with profound learning, great accuracy and clearness of statement, and complete devotion to the work of teaching.

“The Corporation recognize Professor Langdell's contributions to the welfare of the Law School and to the improvement of legal education as sound in theory and effective in practice, and as likely to be of lasting influence for good, not only in Harvard University, but in all universities which prepare young men for the learned professions.”

Two other veteran scholars and teachers retired from the service of the University at the close of the year 1900—01, — Professor Joseph Henry Thayer, of the Class of 1850, and Professor William Watson Goodwin, of the Class of 1851. Both these scholars had devoted their lives to Greek: Professor Thayer, to the New Testament Greek; Professor Goodwin, to the Classical. Professor Thayer was first a minister, and then

a professor in the Andover Theological Seminary. While a professor of that institution, he was chosen a Fellow of Harvard College in 1877; and served as a member of the Board until 1884. Having resigned his professorship at Andover, because of a difference with the trustees concerning subscription to the Andover creed, he was chosen, after an interval, Bussey Professor of New Testament Criticism and Interpretation, as successor to Dr. Ezra Abbot; and this was the office which he resigned at the close of the year under review. Professor Thayer had the keenest interest not only in the language of the New Testament, but in the Canon. His principal work as a scholar was a Greek-English Lexicon of the New Testament, being *Grimm's Wilke's Clavis Novi Testamenti*, translated, revised, and enlarged. As minister, teacher, and scholar Professor Thayer was candid and courageous, but conciliatory and genial, though never lacking in firmness. Since Professor Thayer's resignation as a Fellow of the Corporation, there has been no minister in that Board — a noteworthy departure from former custom.

Professor Goodwin began his service to the University as Tutor in Greek in 1856, but in 1860 was chosen Eliot Professor of Greek Literature, at the early age of twenty-nine. He filled this professorship for forty years. His book on "Greek Moods and Tenses" early established his reputation as a scholar, — a reputation which spread and mounted throughout his long professorial career. As head of the Greek department, he gave instruction at one time or another in the whole range of Greek historians, orators, dramatists, and philosophers; and there were few years in which he was not also carrying on serious literary labors.

Both these American scholars have been for many years well known in Europe. Professor Thayer was one of the committee of Revisers of the New Testament; Professor Goodwin's works have been used in England almost as much as in the United States. On their retirement each of these gentlemen was elected Professor Emeritus.

The Reverend Alexander McKenzie retired from the service of the Board of Overseers as its Secretary at the close of the year 1900-01. He had been Secretary of the Board for twenty-

six years, a term conforming to the traditions of that office.* Dr. McKenzie was a member of the Board of Overseers from 1872 to 1884; and a member of the first Board of Preachers to the University, serving from 1886 to 1889; he was also a lecturer in the Divinity School in the year 1882-83. Although these direct services to the University have been numerous and valuable, his most important contribution to the welfare of the University has been his service during the past thirty-four years as pastor of the neighboring Orthodox Congregational Church, to which large numbers of students have belonged.

The situation and policy of Harvard University with regard to the degree of Bachelor of Arts is peculiar, — one might almost say unique. It has required a degree in arts or science for admission to every one of its professional schools except the Dental School; and it continues to confer on a very large number of persons the degree of Bachelor of Arts, — 419 in 1900 out of 964 degrees conferred, and 483 in 1901 out of 1,031 degrees conferred.† The next largest number of degrees conferred in any department of the University was 130 degrees of Doctor of Medicine in 1900, and 145 degrees of Bachelor of Laws in 1901. The policy of the University is to make the degree of A.B. the fundamental, primary degree of the University, and to use no other in competition with it. The terms on which this degree is given are liberal, so far as the variety of studies which may be counted toward it is concerned, but the requirements for the degree in examinations to be passed are strict. The University has seen its own requirements within the professional schools greatly raised since 1870; and in medicine, at any rate, the limits of that upward movement have not been reached. Meantime, the examination requirements for admission to Harvard College have increased, if one looks back thirty or twenty years, though not, perhaps, within the last ten years. The secondary schools have responded to the increased requirements of the College;

* Henry Flynt, Secretary, 1712-1758; Simeon Howard, 1778-1804; John Pierce, 1816-1849.

† Cf. the corresponding figures at Columbia University in 1901, — 134 degrees of Bachelor of Arts out of a total number of 606 degrees conferred.

so that the schools now do a good part of the work which was formerly done in the Freshman year of Harvard College. There can be no doubt that the two governing boards and the Faculty of Arts and Sciences all desire to maintain the degree of Bachelor of Arts in its full significance as the degree representing a general liberal culture.

Recognizing the improvement which has taken place in secondary schools, and believing that the standard of daily work in Harvard College is but a moderate one, so that large numbers of students could do more work without injury to their health and with benefit to their powers of application, a considerable proportion of the members of the Faculty of Arts and Sciences believe that the present requirements for the degree of Bachelor of Arts can be met by a diligent student, or by a student of unusual ability, in three years, and that the College would reap distinct advantages from making a definite offer of the degree in three years under suitable restrictions against superficial and hasty work, and that this could be done without lowering the present standard for the degree. The Faculty of Arts and Sciences gave much time to the consideration of this subject during the year 1900-01, as is fully set forth in the report of the Dean of the Faculty (pp. 83-89) ; but the Faculty, near the end of the year, refused to adopt a new definition of the requirements for the degree of Bachelor of Arts, prepared by a committee which had given several months to study of the subject. Since the current academic year opened, the Faculty adopted and sent to the Corporation and the Board of Overseers a clear statement of its present practice with regard to recommending for the degree of Bachelor of Arts candidates who have been in residence less than four years. Under this present practice, any young man of industry and fair ability can obtain the degree in three years, if he makes, rather early in his course, an intelligent plan for accomplishing that object.

In April, 1897, the Faculty of Arts and Sciences established a committee called the "Appointment Committee," with Mr. Byron S. Hurlbut as Secretary. It was a large committee, representing all the chief departments of instruction under

that Faculty. The work of this committee has been going on for more than four years, so that it is now possible to give some idea of it. It was copied, with modifications, from the Appointments Bureau of the University of Oxford; and it has been in turn imitated by numerous American universities. During the year under review, a detailed account of the methods of the committee, with specimens of all its blanks, was sent by request to seven colleges and universities.

The number of persons registered with the committee October 1, 1901, was 1,737,—an increase of 713 within two years. By far the largest number of those registered with the committee are teachers. Each person registering, if meaning to teach, mentions the subjects which he feels especially prepared to teach. The number of registrations by subject is 3,792; and the number of subjects mentioned is 71. Ninety-two persons desired business appointments only.

From the beginning, the committee has been endeavoring to ascertain in what institutions of learning, and in what parts of the country, Harvard graduates are teaching, or have recently taught. The list is still very incomplete; but it has been thus far ascertained that Harvard graduates are teaching, or have recently taught, in 535 universities, colleges, and secondary schools, scattered through 51 states, territories, recently acquired islands, and foreign countries. This enumeration does not include superintendencies or principalships of schools.

During the past two years a record has been kept of the requests addressed directly to the committee or its Secretary for persons to fill positions, but not of those addressed to individual members of the committee. These requests numbered in 1900-01, 321 for teachers, 90 for private tutors, and 99 for miscellaneous positions. During the year ending October 1, 1901, 163 teachers' positions are known to have been secured through the direct agency of the committee; and it is supposed that a considerable additional number were really secured, though the committee was not informed of the results. These 163 positions were divided as follows: in secondary schools, 95; in universities and colleges, 54; two-year engagements as tutors, 2; permanent business places, 12. These figures do not include positions of a temporary nature secured during the academic year for undergraduates.

For work during the summer vacation of 1901, 218 resident students registered; for work during the academic year beginning October 1, 1900, 231 resident students registered, of whom 107 desired work as tutors. A great variety of work is secured for undergraduates, both in vacation and in term-time. Tutoring is the best resource; stenography with type-writing a very good one; for many of the professors and instructors of the University give to students much of their lecture-work, correspondence, and copying.

The function of the committee is not limited to securing first places: in the year under review, 48 teachers already at work made special application for a better place, or, at least, for a change of place for the year 1901-02. Of these, so far as the committee is informed, 36 were successful in making a change, 15 of them through the direct agency of the committee. The nature of the places secured during the year is various, extending from positions in elementary schools to professorships in universities. The places were distributed in 31 states, territories, and so forth — 24 were in the Philippines.

The work of the committee is now firmly established; but it is capable of, and should have, large development. With public schools the relations of the committee are not so satisfactory as with private and endowed schools, colleges, and universities. It is only within the last few years that the number of Harvard students definitely fitting themselves for this field has been considerable. Young Harvard men are beginning to realize the opportunities which the great public school systems offer; and superintendencies are attracting well-trained men. The committee should be able to further the wishes of young graduates who desire to enter business houses. In this work the committee can be greatly aided by graduates of the University already well established in business. Another important development of the work should be procuring places for graduates of the professional schools, especially of the schools of medicine and law. The organization of this work, so far as registration is concerned, can easily be accomplished by the coöperation of the Secretaries of the schools; but the willingness of the committee to undertake this particular work must, of course, be brought to the notice of Harvard men who are practicing these professions all over the United States.

The services of the Appointment Committee are rendered gratuitously, the committee having departed in this respect from the practice of the Oxford Appointments Bureau.

The institution called the "sabbatical year" has been decidedly useful to the University, having, indeed, but one drawback, — namely, that a teacher with a family and no resources but his salary can hardly avail himself of it. When this policy was first adopted by the Corporation, it was thought that leave of absence should be given for a complete year only; because it was believed that competent substitutes could be more readily procured for a whole year than for half a year. Of late years, the practice of procuring substitutes from other colleges and universities has come in, and has approved itself to all concerned. Twice substitutes have come from English universities, and many times from American. It having proved easier to get desirable substitutes from other institutions for a half year than for a whole year, the President and Fellows of late have begun to grant leaves of absence for half a year, to the advantage of the staff and without detriment to the University. An incidental advantage of the system has been that some gentlemen who proved to be very acceptable substitutes have afterwards been invited to permanent positions in Harvard University. Thus, during the current year, three full professors will join the University whose merits were first demonstrated here when they were serving as substitutes.

The following table exhibits the number of persons examined for admission to Harvard College in ten successive years, the number admitted, the per cent. admitted, the number admitted "clear," and the per cent. admitted "clear." The figures of the preliminary examination are not included in this table. There is a satisfactory increase in the number of persons examined for admission to the College; but it will be noticed that the increase is not absolutely steady. Three times a slight decrease takes place, and twice the increase is insignificant. The percentage of admissions has distinctly increased, as clearly appears on comparing the average percentage of admission in the first five years with the same average in the

	EXAMINED.			ADMITTED.			PER CENT. ADMITTED.			ADMITTED "CLEAR."			PER CENT. ADMITTED "CLEAR."		
	June.	Sept.	Total.	June.	Sept.	Total.	Ju.	Sep.	Tot.	June.	Sept.	Total.	Ju.	Sep.	Tot.
1892	347	105	452	316	85	401	.91	.81	.89	135	12	147	.39	.11	.33
1893	362	131	493	331	92	423	.91	.70	.86	183	17	200	.51	.13	.41
1894	379	126	505	337	88	425	.89	.70	.84	163	19	182	.43	.15	.36
1895	421	134	555	364	102	466	.86	.76	.84	180	26	206	.43	.19	.37
1896	393	140	533	336	94	430	.85	.67	.81	167	19	186	.42	.14	.35
1897	435	136	571	401	99	500	.92	.73	.88	194	9	203	.45	.07	.36
1898	460	103	563	408	84	492	.89	.82	.87	210	9	219	.46	.09	.39
1899	458	122	580	411	95	506	.90	.78	.87	190	14	204	.41	.11	.35
1900	510	137	647	459	111	570	.90	.81	.88	204	11	215	.40	.08	.33
1901	496	122	618	462	103	565	.93	.84	.91	236	10	246	.48	.08	.40

last five. The per cent. admitted "clear" has not increased, but remains almost the same for the last five years as for the first five, in spite of the unintelligible fluctuations up and down during the ten years. During this period, the requirements for admission have undergone considerable changes; and during the last four years two different methods have been in operation. The figures of the table do not shed much light on the much discussed question whether the new method is, or is not, more difficult than the old. So far as they go, however, they indicate that the partial and gradual adoption of the new method has been accompanied by an increasing percentage of admissions, though not of "clear" admissions. Hereafter, the new method alone will be in operation, and some trustworthy information will soon be obtained concerning the relative difficulty of the new method, as actually administered, and the old.

Many American colleges have imagined, and even affirmed, that success or failure in athletic sports has an immediate influence on the resort to colleges, victory increasing the resort within a year or two, and defeat diminishing it. An inquiry into Harvard experience on this matter may, there-

fore, have some interest. The following table exhibits the victories and defeats of Harvard in competition with Yale for the past ten years; and this exposition is accompanied by the number of preliminary candidates at Harvard, the number of final candidates, the number of the Freshman class at Harvard, the number of the first-year Scientific class at Harvard, the number of the Freshman class at Yale, and the number of the first-year Scientific class at Yale in each year following the athletic victories or defeats which stand in the same line. The table explains itself, except perhaps for the years 1895 and 1896. In those years Harvard did not play with Yale in all of the sports; so that other competitors are mentioned in the table. In addition to the columns containing the athletic results, a column is added for the results in debating.

Calendar Year.	Track Athletics.	Baseball.	Rowing.	Football.	Debate.	Academic Year.	Preliminary Candidates (H. C.).	Final Candidates (H. C.).	Freshman Class (H. C.).	First-Year Class (L. S. S.).	Yale College Freshman Class.	Sheffield S. S. Freshman Class.
1891	H		H	Y		1891-92	428	403	381	19	268	200
1892	H	Tie	Y	Y		1892-93	460	452	409	48	300	207
1893	H	H	Y	Y	H ²	1893-94	467	493	425	45	315	228
1894	Y	Y	Y	Y	H ²	1894-95	501	505	399	91	331	250
1895	Y	Y	Y	(Pa)	H	1895-96	470	555	462	106	331	147*
1896	Y	(P)	(C)	(Pa)	Y	1896-97	562	533	416	129	355	170
1897	Y	H	Y	Tie	Y ²	1897-98	559	571	471	132	300	187
1898	H	Y	Y	H		1898-99	591	563	471	149	333	192
1899	H	H	H	Tie	H	1899-00	618	580	498	179*	337	187
1900	H	H	Y	Y	H ²	1900-01	618	647	537	155*	329	199
						1901-02	631	618	551	157*	341	245

H = Harvard won; Y = Yale won; P = Princeton won; Pa = University of Pennsylvania won; C = Cornell won.

One might suppose that the most immediate effect of victory or defeat in athletic sports would appear in the number of

* Increase in requirements for admission.

preliminary candidates and of final candidates for admission in the following year. Examining first the column of preliminary candidates, it will be seen at once that there is no relation between athletic victory or defeat for Harvard, and the increase or decrease of preliminary candidates in the following year. Thus, the years 1894, 1895, and 1896 were years of uniform defeat; yet, on the whole, the number of preliminary candidates increased substantially. The year 1899 was a year of victory; but no increase in the number of preliminary candidates took place. The column headed Final Candidates exhibits a similar result—declining fortune for Harvard is followed twice by small losses and thrice by good gains, and rising fortune is followed once by a small loss, twice by small gains, and once by a large gain. The last four columns of the table permit a comparison between the entering classes at Harvard and those at Yale. In 1893 defeats and victories were even, and in the following academic year Harvard College lost twenty-six Freshmen and Yale college gained sixteen; the Lawrence Scientific School gained forty-six Freshmen and the Sheffield Scientific School gained twenty-two. After the next year, 1894, when Yale was uniformly victorious, the Freshman class at Yale College gained nothing, while at Harvard College that class gained sixty-three; the Lawrence Scientific School gained fifteen, and the Sheffield Scientific School, with increased requirements for admission, lost one hundred and three. After 1895, when Harvard was defeated in every sport, Harvard College lost forty-six, whereas Yale College gained twenty-four; and the Lawrence Scientific School and the Sheffield Scientific School each gained twenty-three; but after 1896, when Harvard was successful in not a single sport, Harvard College gained fifty-five, whereas Yale College lost fifty-five; the Lawrence Scientific School gained three and the Sheffield Scientific School gained seventeen. After 1899, when Harvard won in every sport except football, where there was a tie, Harvard College gained only thirty-nine and Yale College lost but eight; the Lawrence Scientific School lost twenty-four and the Sheffield Scientific School gained twelve. In 1900, Harvard lost both rowing and football to Yale, but in the following academic year Harvard

College gained fourteen, Yale College gaining twelve; the Lawrence Scientific School gained two and the Sheffield Scientific School gained forty-six. In short, it is impossible to trace any clear influence of success or failure in athletic sports on the comparative resort to these two colleges as this resort appears in their respective Freshman classes. Looking at the whole period, the Freshman class at Harvard has gained a much larger percentage than the Freshman class at Yale, although Yale has been decidedly more successful in the athletic sports, and particularly in football and rowing, which are the sports in which colleges and schools, and the general public take the strongest interest.

The following table compares the results at Yale and Princeton, the competitive games being confined to football and base-

Calendar Year.	Baseball.	Football.	Academic Year.	Yale College Freshman Class.	Sheffield S. S. Freshman Class.	Princeton Academic Freshman Class.	Princeton Scientific Freshman Class.
1891	P	Y	1891-92	368	300	168	90
			1892-93	300	207	179	122
1892	Y	Y	1893-94	315	228	140	118
1893	Y	P	1894-95	331	250	130	126*
1894	Y	Y	1895-96	331	147*	135	106*
1895	Y	Y	1896-97	355	170	161	101*
1896	P	P	1897-98	300	187	187	98*
1897	P	Y	1898-99	333	192	200	111
1898	Y	P	1899-00	337	187	174	117
1899	P	P	1900-01	329	199	220	130
1900	P	Y	1901-02	341	245	212	172

ball. Here again, if the whole period be considered together, Yale, which has been the most successful in the sports, has gained in the ten years a much smaller percentage than Princeton, so far as the College and Scientific School Freshman classes are concerned. In this table, however, the fluc-


* Increase in requirements for admission.

tuations in the size of the Freshman classes correspond rather better with the fluctuations of victory and defeat than they do in the Harvard-Yale table. The figures for the scientific schools of Yale and Princeton cannot well be compared, because in 1894 the Sheffield Scientific School lost numbers temporarily on account of a distinct increase in its requirements for admission; and during the next three years the Princeton School of Science had a similar experience.

If the American colleges and universities could satisfy themselves that success in athletics is not indispensable to college growth, or better still, be persuaded that too much attention to athletic sports, or a bad tone in regard to them, hinders college growth, there would probably result a great improvement in the spirit in which intercollegiate contests are conducted: they would come to be regarded as the by-play they really are, and would be carried on in a sportsmanlike way as interesting and profitable amusements.

From incomplete but serviceable lists submitted to the Athletic Committee by the managers of the various athletic sports, it appears that tennis is the sport which still affords to the largest number of students the means of out-of-door exercise; 790 students were reported as playing tennis. The next most popular sport is rowing, 640 students having taken part in that sport. Football comes next with 242 players; and baseball fourth with 220. Track athletics engaged the attention of 146; and no other sport attracted so many as 100 persons.

The 640 men reported as rowing constitute the membership of the Weld and Newell Clubs. Probably every one of them took part in rowing during the year; and at least 250 rowed constantly during the seasons. There were 27 eight-oared crews on the water at one time. The new boat-house has proved very useful. In spite of its exposed situation, it is comfortable during the winter, and the in-door exercises on the rowing machines and in the tank can be carried on through the cold weather. The grading of various parts of the field has been continued, and it is the policy of the Athletic Committee, which has charge of the grounds, to drain and grade



the entire area in the course of time. The Athletic Committee is inclined to replace the wooden seats about the football field by seats built of iron covered with concrete. During the past four years \$33,000 has been saved from the gate money, and turned over to the Treasurer of the University as part of a sum to be devoted to improvements on Soldier's Field.

These facts about athletic sports and the work of the Athletic Committee are derived from the annual report made to the President by the Chairman of the Athletic Committee. It is probable that the whole of this report will hereafter be made a part of the President's annual Report.

The sickness reports for the year prepared by the Medical Visitor will be found in the Appendix (pp. 307, 308). The principal disorders are colds, indigestion, diseases of the eyes, the grippe, surgical injuries, tonsillitis, diarrhoea, headache, and diseases grouped as miscellaneous. The number of cases of appendicitis, 33, was more than double the number of cases of typhoid fever, 15. The months in which most sickness prevailed were November, January, and March. The smallest percentage of reported sickness occurred in the Law School; the next smallest in the Graduate School; and the next in the Divinity School. The College had the largest percentage of sickness, the younger students being apparently decidedly more liable to sickness than the older. The probability is that the older men do not so easily yield to or report slight disorders. The facts recall a remark which President Kirkland is said to have made to a malingering student, — "that sicknesses prevail within the precincts of the College in a greater proportion to the deaths than in any other place."

The amount of money spent in the year 1900-01 at Harvard University in aid of students, including all fellowships, scholarships, and beneficiary aid, was \$105,802.21, of which \$88,898.66 was spent in the Department of Arts and Sciences, — that is, in the Graduate School, College, and Scientific School. In spite of this heavy expenditure, it appears in the report of the Dean of the Graduate School (p. 141) that there were 323 applications for fellowships and scholarships to be held in the

current academic year, of which only 67 were successful. In the preceding year, out of 354 applications, only 76 were successful. Competition for these aids is, therefore, large enough to enable the selecting committee to exercise careful discrimination in the selection.

The Dean of Harvard College called attention in his report for the academic year 1898-99 to the need of more scholarships in Harvard College; and this year he again calls attention to this urgent need. He reports that in the three classes, Freshman, Sophomore, and Junior, between 70 and 75 men with grades which a few years ago would have insured recommendation for aid have failed to receive scholarships. He thinks it certain that the number of College students with very high rank has increased; and that it is a good deal harder to win a scholarship than it used to be. The attention of the Overseers is invited to the Dean's remarks on this subject (pp. 101-105).

The Dean of the Scientific School points out (p. 107) that the rapid increase in the number of points required at the entrance examinations has not yet caused any decline in the number of the first-year class. More than half of the intended addition to the entrance requirements has now been made, — that is, the number of required points has been already raised from fifteen in 1898 to twenty-one in 1901. Five points only remain to be added; but this last addition will, of course, tax severely the capacity of the smaller public high schools. Anticipating this difficulty, the Dean of the School points out that the Lawrence Scientific School has been engaged for several years in improving the class of students called "Special" students. Special students include, first, a limited number of persons of considerable maturity, who wish to engage in some particular study; and, secondly, a larger number of persons who come from schools where they could not obtain an adequate preparation. For the second class the School has instituted an examination in entrance subjects aggregating twelve points, including the required entrance Mathematics. A student who is thus admitted as a Special student is expected to make good his entrance conditions within two years, and to obtain regular standing. Besides passing at entrance the

examinations in subjects aggregating twelve points, he is required to present from the master of the school whence he came a written consent to his admission as a Special student. Many such persons have obtained a degree in the School in not more than five years, by obtaining satisfactory grades in advanced studies which are in continuation of elementary studies entering into the entrance examination, and by working through the greater part of two summer vacations.

By the middle of the current year, the students of the Lawrence Scientific School will be in the enjoyment of admirable new buildings for the Departments of Engineering, Geology, Architecture, and Mining. It is not only the buildings that are new : a large amount of new equipment has been placed in the new buildings. Teachers and students will have the great advantages of more space, more light, better ventilation, and better apparatus. The result should be a decided improvement in the work of the School. The Dean points out that the student in Harvard College who early in his course makes up his mind to enter a scientific profession may, within five years from his entrance to the College, obtain the degree of Bachelor of Arts and the degree of Bachelor of Science, and enter the novitiate of his scientific profession well equipped for professional duty. To accomplish this result, he should, however, know what his profession is to be by the end of his Freshman year in the College.

The report of the Dean of the Graduate School (p. 113) is unusually full and instructive. About one quarter of the resident students in 1900-01 were registered for less than full work ; of these 76 persons, 17 were teachers in this University, 20 were teachers in neighboring schools and colleges, 3 were students in a neighboring institution, and of the remaining 22 a good proportion were men who had nearly completed the requirements for one of the higher degrees. This class of persons, therefore, — resident students doing less than full work, — is a very creditable one ; and it is to be wished that a larger number of teachers in the schools and colleges of Eastern Massachusetts might avail themselves of the opportunities for advanced work offered by the Graduate School.

It is another interesting fact that less than 30 per cent. of the first-year students in 1900-01 entered the School immediately on receiving their first degree. The 70 per cent. had been carrying on graduate studies at other colleges or universities, or had been engaged in teaching. One hundred and thirty-nine persons, or about two fifths of the School, had already been graduate students elsewhere. The Dean gives a table which shows the migration of graduate students, and the fields of study of these migrating students (p. 127). In 1900-01, twenty-three colleges were represented in the School by members of their Faculties on leave of absence, and five secondary schools were similarly represented. This enumeration does not include the men doing partial work who were actively engaged each in the practice of his profession in or near Boston; neither does it include the seventeen members of the School who were serving Harvard University as Instructors, Teaching Fellows, or Assistants.

Nearly two thirds of the members of the School were born out of New England; but nearly one half claimed residence in New England, having immigrated from other parts of the country.

The average age at which the degree of Master of Arts and the degree of Doctor of Philosophy are taken continues to be deplorably high. A suitable age at which to take the degree of Doctor of Philosophy is twenty-five or twenty-six; the average age is now much nearer to thirty. The average age is raised by the fact that many candidates for these degrees teach for a time before becoming candidates.

The Faculty of Arts and Sciences has, thus far, been unwilling to require that the theses of the candidates for the degree of Doctor of Philosophy or of Doctor of Science should be printed. The enormous size of many of these theses has contributed to prevent the Faculty from adopting the rule which prevails in other universities. Many of these theses would make big books; and there are others which, though not large, would be expensive to produce in printed form, because of the elaborate plates which accompany them. Most of the writers of these voluminous or carefully illustrated theses would be quite unable to bear the expense of publication. It has

seemed to the President that theses of such magnitude should not be required, or even accepted, as Doctors' theses. They have seemed to him exaggerations of any work which it is reasonable to ask for as evidence of fitness for a degree which should be taken by twenty-five or twenty-six years of age, if not earlier. This view, however, does not commend itself to the several departments of the Faculty of Arts and Sciences which have charge of candidates for the higher degrees.

The Dean has remarked the increasing number of American universities which offer graduate instruction, and points out that the means of attracting graduate students to Harvard University need to be carefully studied. In the opinion of the President, the surest elements of this attraction will be found to be these: (1) liberty in study and a wide range of choice; (2) a rich library; (3) professors who are leading men in their respective departments of learning; (4) economical and wholesome conditions of life in respect to board and lodging, and pleasurable conditions as regards exercise; (5) a climate advantageous for study at all seasons of the year; (6) money aids, and opportunities for earning money while members of the School.

On the 10th of June, 1901, Professor Francis Greenwood Peabody was elected Dean of the Divinity School, — an office which, though free from any large amount of administrative detail, is nevertheless a responsible one, because of the wholly unprecedented quality of the Divinity School, in regard to organization, methods, and aims. Professor Peabody takes up his new duties with full and intimate knowledge of the changes made in the School during the past twenty years, and of the altered relations of the School to the Protestant ministry, and of the University to the religious world.

The figures given in the Dean's report for the Divinity School (p. 150) show the reduction in the number of students caused, in 1886-87, by the requirement of the degree A.B. for admission, and the still more striking reduction caused by increasing the tuition fee to \$150 in 1897-98. These shrinking effects have apparently been now overcome, for the Divinity School has enrolled during the current year 37 students, against 28 in each of the two years preceding.

The Summer School of Theology of 1901 was decidedly successful, having an enrolment of 89 persons, divided among nine denominations, more than two-thirds of the students belonging to Evangelical denominations. The entire session was devoted to the subject of the Christian Minister's Relation to Social Questions. Nine lecturers from Harvard University, and thirteen lecturers from other institutions took part in the instruction. Four excursions to various philanthropic institutions in the neighborhood were arranged for afternoons. The School very nearly paid its expenses, which was not the case in the year preceding. This summer course seems to have established its usefulness, and will be continued.

The vacancy caused by the death of Professor Everett was filled during the year by the election of William Wallace Fenn, A.B., Harv., 1884, S.T.B. and A.M., Harv., 1887. Mr. Fenn was at the time pastor of a Unitarian Church in Chicago; but he was also known to the authorities of the University and to the ministers of that denomination as a successful student of literature and theology. His election carried out "the understanding which was practically entered into with the subscribers to the new endowment in 1879, namely, that Unitarian doctrines would always be entitled to respectful exposition in the school, and that to properly expound these doctrines at least two professors would always be needed, one of whom should be a professor of theology." (President's Report for 1883-84, p. 33). The entire endowment of the School has been provided by Unitarians; but the constitution of the School prescribes "that no assent to the peculiarities of any denomination of Christians shall be required of either instructors or students."

No progress was made during the year towards a satisfactory solution of the problems concerning the enlargement of Austin Hall. For a school of 650 students, the present building is inadequate as regards the number of lecture-rooms and the number of desks in the reading-room. Moreover, the School has been enlarging its library at a rapid rate; and by the end of the current year, the shelving in the present building will be filled. As there is no reason why the School should not

spend \$12,000 a year on books, and as books are the sole apparatus required by a law school, the expediency of providing immediately more shelving on which to place the accessions is obvious. The chief distinction of the Harvard Law School — after its professors — is its admirable library.

The Faculty of the Law School is in favor of limiting the instruction given in that School to law determined by courts. They therefore would not admit to the School such studies as institutional history, government, political science, and administration national, state, municipal, or colonial. The demand for instruction in these subjects at universities is manifestly increasing; but since the Law School is indisposed to take them up, they will have to be developed in the Graduate School.

The entering class of the Medical School numbered 196, — a larger number than usual, because it was the last year that one could enter the School without possessing a degree in Arts or Science. It was not, as a whole, a well-prepared class: at the end of the year only 100 passed all the examinations successfully, and 15 failed to pass in any.

The experimental rearrangement of the studies of the first and second years in the Medical School, whereby the time devoted to each subject was reduced to half a year, the number of weekly hours devoted to each subject being much increased, has now been in operation for two whole years, the class which entered in 1899 having completed the second year of the course on this system last June. The new plan has, in the opinion of the professors, been successful in all subjects, with the single exception of the second-year work in Anatomy: it is the opinion of the Department of Anatomy that two months partially devoted to Anatomy in the second term of the second year, after a complete intermission of that study for a whole year, are not sufficient. The experiment will not be complete, however, until a class which began its studies in the Medical School on this system has graduated. Then, the clinical teachers of the third and fourth years will be able to testify whether the men trained in the new method during the first two years are the equals or the superiors of the men who were

trained in the old method. The object of the School being to train trustworthy practitioners, the methods of instruction are finally to be tested by the effective knowledge and skill of the graduates in practice.

At Commencement there was announced a great gift to the Medical School from Mr. J. Pierpont Morgan. He declared his intention of erecting three large structures for the occupation of the Medical Department. The cost of these three buildings, including the preparation of their site, was estimated at more than a million of dollars.

The examinations for the degree of the Dental School are strictly conducted, as is evident by the large percentage of failures. In June last 46 students applied for the degree, of whom 17 failed to pass the examinations. The clinical opportunities of the students determine a very important part of the instruction of any dental school. That the opportunities are large in the Harvard Dental School may be seen in the record of the work done in the Infirmary and the different clinics. In the Infirmary, more than 7,000 patients were treated in 1900-01, on whom 21,557 operations were performed; in the mechanical department, 358 sets of artificial teeth were supplied to patients; and 97 sets were repaired; 114 cases of irregularity were treated and corrected; and 107 crowns and caps were supplied. The Infirmary also dealt with 48 cases of fractured jaws, 7 cases of cleft palate, and 3 cases of hare-lip. All these various operations are so many means of instruction for the students of the School. They perform, under vigilant direction, the operations of the Infirmary, and make the mechanical appliances. It is the opinion of the Dental professors that the School can now bear a substantial increase of the requirements for admission.

The expenses of the School of Veterinary Medicine for 1900-01 exceeded its receipts by \$8,456.45; and this deficit had to be paid out of the general treasury of the University. In November, 1900, the Corporation, having given up all hope of procuring an adequate endowment for the School and Hospital, took the necessary steps to stop this drain on the general treasury. They voted to discontinue the free clinic

within a few weeks, to close the Veterinary Hospital on June 1st, 1901, to receive no more students of veterinary medicine, and to accept no more annual subscriptions to the Veterinary Hospital; they also gave notice to the two full professors of the Department that their salaries would not be continued after September 1st, 1901. The third-year class graduated in June, 1901; and the Corporation provided for the second-year and first-year students by agreeing to pay their tuition fees in the veterinary department of the University of Pennsylvania for one and two years respectively. In view of the fact that Professor Charles P. Lyman had labored earnestly in the School for nineteen years, the Corporation admitted him, by exception, to a part of the benefits of the retiring allowance system.

The University has never before been compelled to abandon a department of instruction once adopted by it. The fact seems to be that small domestic animals, like dogs, cats, and birds, engage the affection of their owners to such a degree that money will be spent freely to save their lives, or relieve their sufferings; but the larger animals, like cattle and horses, do not so much enlist affection, so that their moderate money value and the uncertainty of their restoration to usefulness are allowed to limit the expenditure upon them when disabled.

In spite of the closing of the Veterinary School and Hospital, the University has not forgotten that all the great advances in human medicine during the last fifteen years have come through the study of comparative medicine, or, in other words, through the discovery of the effects on the human body of the access to it of other members of the animal kingdom, or of preparations derived from the bodies of other animals.

The Bussey Institution had a good year in 1900-01, for thirty-four students were in attendance during the year, among them five students of landscape architecture in the Lawrence Scientific School, who were aiming at the degree of Bachelor of Science, but sought instruction in agriculture and horticulture at the Bussey Institution.

New green-houses and a new head-house were erected for the Horticultural Department, and were a great improvement

on the old ones. Two new rooms were also finished in the attic story of the Stone Building for the better accommodation of classes in natural history and engineering. The Dean mentions (p. 191) that a detached building for the Library would be a desirable addition to the present accommodations of the School.

The situation of the College Library in Gore Hall becomes more and more difficult, as the recent reports of the Librarian have clearly shown (p. 192). The following table of expenditures in the Library for each of the three years past shows that the money spent in the purchase of books has been, in those years, only from 26% to 37% of the total expenditures for the Library. Much more than half of the annual expenditures are for salaries, wages, light, heat, cleaning, repairs, and the incidental costs of accommodating and assisting the hundreds of readers who daily resort to the Library between nine in the morning and ten at night.

EXPENDITURES OF THE LIBRARY.

	1898-99.	1899-1900.	1900-01.
For books	\$15,815.68	\$25,502.38	\$25,121.97
For salaries and wages	33,538.45	33,886.62	32,959.27
For light, heat, printing, cleaning, binding, and sundries	11,156.06	10,808.85	9,566.62
	<u>\$60,510.19</u>	<u>\$70,197.85</u>	<u>\$67,647.86</u>

A library for teachers and students is necessarily managed on different principles from those which apply in a library for the general public. For its successful administration, it needs a larger proportion of high salaries, and more expenditure for advice and help to readers; because it tries to serve a large number of learned men — teachers and others — who are working at or beyond the confines of knowledge, and a much larger number of advanced students in many languages and many departments. It is always trying, also, to collect and arrange special materials in recondite subjects.

With the present income for the purchase of books, about 16,000 volumes a year can, on the average, be added to the Library.

ANNUAL INCREASE OF VOLUMES (EXCLUDING PAMPHLETS).

	1898-99.	1899-1900.	1900-01.
College Library (Gore Hall only)	15,174	19,721	13,797

If the income of the Library available for the purchase of books remains what it is now, the number of volumes in Gore Hall will double in twenty-four years. But, as all experience proves that the money annually available for the purchase of books will increase, the Corporation have to contemplate the doubling of the Library in less than that time. In the past twenty-four years, that is, since the year 1876-77 (the year in which the fire-proof addition on the east side of Gore Hall was completed), the number of volumes in the collection has rather more than doubled, and the expenditures of the Library have much more than doubled.

EXPENDITURES OF THE LIBRARY IN 1876-77.

For books	\$11,433.46
For salaries and wages	14,571.40
For heat, printing, cleaning, binding, and sundries (no light)	2,621.58
	<hr/> \$28,626.44


As the Librarian has repeatedly pointed out, there is no room for more books in Gore Hall, and by the lack of space in the working-rooms the labors of the staff are hindered, and made less productive than they might be. In order to accommodate readers, it has been necessary to move thousands of books into buildings which are not fire-proof, and to maintain in those buildings auxiliary reading-rooms. These scattered libraries now contain 29,880 volumes (p. 200). Moreover, there are no rooms in Gore Hall where teachers can meet classes for lectures or conferences which need to be illustrated by many books drawn from the Library.

These serious embarrassments would be remedied for ten or fifteen years by erecting a building in contact with the present structure large enough to contain a reading-room with three hundred desks, a catalogue-room, a delivery-room, and four conference rooms. The upper half of old Gore Hall could then be converted into a stack in full execution of the plans adopted in 1895. The present delivery-room and the room over it could then be assigned to the Library staff. Towards completing the stack in Gore Hall, the Corporation holds the Gore Fund of \$20,571.18. The construction of a new reading-room is wholly beyond the resources of the Corporation; it

must wait for a single giver, or for a combination of graduates and friends of the University who realize that next to the daily instruction given by living teachers, books are the most indispensable provision at a seat of learning.

The increasing rate at which large collections of books grow suggests strongly that some new policy is needed concerning the storage of these immense masses of printed matter. The University teachers in Arts and Science, asked to indicate every year the books which in their judgment should be freely accessible to students in their several departments of instruction, are content to have about 55,000 volumes accessible without restriction to the direct handling of their students (p. 203). This number includes the books which are in the reading-room of Gore Hall, those in the various special libraries and laboratories, and about 2,500 in the Harvard Union. These freely accessible books may be called the contemporary working-library for Arts and Science, or the total number of books which 2,500 students, distributed among about 360 courses of instruction, may be expected to utilize (p. 205). Again, 63,673 books were borrowed from the College Library during the year 1900-01. It may safely be inferred from these figures that there is already a large mass of unused, or very little used, books in the Gore Hall collection of 367,000 volumes.

It may be doubted whether it be wise for a university to undertake to store books by the million, when only a small proportion of the material stored can be in active use. Now that travel and the sending of books to all parts of the country have become safe and cheap, it may well be that great accumulations of printed matter will be held accessible at only three or four points in the country, the great majority of libraries contenting themselves with keeping on hand the books that are in contemporary use, giving a very liberal construction to the term "contemporary." If the Congressional Library, the combined libraries in New York City, and the combined libraries in Chicago would undertake to store any and all books, making them accessible to scholars in every part of the country, the function of the thousands of other libraries in the United States might safely be considerably simplified.



In every well conducted library, the stamped date, put inside of each book when it is lent, supplies, in the course of years, the needed information as to whether the book is, for present use, dead or alive. An examination of the books once in five or ten years might divide the unused from the used. The unused might be stored in a much more compact manner than they are now, even in the best-arranged stacks. The card catalogue of a great library might also be divided into two distinct parts, — the catalogue of the dead and the catalogue of the living books. When a card catalogue numbers millions of cards, its daily use is greatly obstructed by the mere multitude of its cards, and much time is wasted in handling it, both by readers and the library staff. Such a division of the books in a library is repulsive to librarians, and to many learned men who like to think that all the books on their respective subjects, good, bad and indifferent, alive and dead, are assembled in one place. In a university, however, the main object of a library must always be to teach the rising generation of scholars. Whatever injures a library for the use of learning's new recruits should be avoided, but without making it impossible for the library to serve also the needs of veteran scholars.

The report of the Librarian, taken in connection with the Treasurer's statement concerning the Library (pp. 72-74), makes very evident the costliness of the various operations which must be performed between the first indication that a certain book is desired at the Library and the placing of the book upon its shelves. The cost of these various operations not infrequently exceeds the cost of the book; and it is probable that, on the average, it is not less than one dollar a volume. To reduce this cost is a great object in all libraries. One of the most expensive items is the cataloguing. The operation of cataloguing has been considerably simplified at the Library during the past twenty-five years; but much remains to be done in the direction of simplification and economy. The coöperative printing of titles is a very promising new method. As soon as it was well determined that a printed card was better than a written card, it became obvious that the printing ought to be done at one place for many libraries. The service

lately offered by the Congressional Library (p. 216) is a very valuable aid to all libraries ; and it is an aid which the Government may with great appropriateness provide for the general benefit of the whole country.

It is now forty years since Ezra Abbot, Assistant Librarian at Harvard University, began a new alphabetical catalogue of the College Library, made on cards five inches long and two inches wide, arranged in drawers. In order that the cards should be conveniently handled and read in these drawers, two sloping wooden blocks were devised by Mr. Abbot, — one fixed in the front of the drawer, the other movable and placed behind the cards. The slopes of these blocks were important, and each block was the subject of much study. For movable divisions between the cards in one drawer, other wooden blocks about an eighth of an inch thick, and of the same length as the cards, but a little higher, and with bevelled tops, were devised, and so disposed that when placed among the cards, as these stood in their normal position leaning against the block behind them, the bevelled edge of the dividing block or guide-board presented to the eye a level surface. On the bevelled edge were written or printed the two or three letters which defined the alphabetic position of the adjoining cards. The two sloping blocks and the thin guide-boards were indispensable parts of the card catalogue. Mr. Abbot also contrived appropriate means of labelling each drawer on its front, by means of movable cards held by metallic cleats, and of preventing the cards in the drawer from being lifted out, when such prevention was desirable. For the latter purpose he ran a removable wire through all the cards in a drawer, the hole in the cards being so much larger than the wire that the cards could be freely sloped either way in the drawer. These inventions Mr. Abbot made for the sake of furnishing to all users of the Harvard Library a catalogue arranged by subject, — a form of catalogue particularly useful to students who are not well acquainted with the bibliography of their several subjects. It was Mr. Abbot's fundamental object to enable any person to find with facility all the works in the Library that related to the subject he was inquiring into. Mr. Abbot's card catalogue methods were, however, equally

applicable to an alphabetical catalogue of authors, buyers, sellers, patients, clients, or other groups of persons.

The inventions thus made by Mr. Abbot have now been utilized in business. The card catalogue constructed on Mr. Abbot's principles is now found in every large commercial establishment, in every physician's office, in every private library of considerable extent, and, indeed, is now used in the United States wherever an alphabetical list is to be kept up to date, and is to be frequently referred to for ready information. Many business firms, and educational and charitable corporations now keep their ledgers in the form of a card catalogue. In the card catalogues now in business use, the elements of Mr. Abbot's construction will all be found. An indispensable tool in modern industries, trades, and professions, was provided forty years ago by a man of learning who had no business object whatever in view.

The botanical departments of the University — under which title may be included the Botanic Garden, the Gray Herbarium, the Botanical Museum, and the Arnold Arboretum — all have constant friends and supporters. No one of them is adequately endowed; but the work of all four is prosecuted with diligence; and when the income of the inadequate endowments proves insufficient, contributions of friends fill the annual gaps. Moreover, in each of these branches of the total botanical department, the permanent endowments have been substantially increased in recent years. The most important addition of the year 1900-01 is that of \$95,970 to the endowment fund of the Arboretum. The Director takes a legitimate satisfaction in the fact that these gifts for the endowment of the Arboretum have not come entirely from persons living in Massachusetts, a substantial portion having been contributed by persons living in other parts of the United States.

Last summer the Prussian government offered Assistant Professor Théodore W. Richards a full professorship of chemistry in the University of Göttingen, and described the professorship as offering ample opportunities for chemical research. Dr. Richards was an Assistant in Chemistry at Harvard from

1889 to 1891, Instructor from 1891 to 1894, and Assistant Professor from 1894. He had, therefore, been twelve years in the service of the University, and he had in that interval published a series of chemical investigations of unusual merit. Indeed, it was these publications which attracted the attention of the Prussian government. The desire of the Corporation to retain the services of Professor Richards caused them to consider the conditions under which it was reasonable to expect professors engaged in instruction to be also successful original investigators. To determine the just relation between instruction and research is one of the most difficult of modern university problems. It is clear that a man of letters or science, whose time is to be chiefly given to private study, and who is supported on an endowment, must have contact with advanced students of his subject, else he will have no competent assistants in his researches, and will bring up no body of disciples. He should also be required to give stated lectures, or prepare stated reports, or perform other duties which will give public evidence that he is hard at work on his subject, and is producing results which can be imparted to advanced students, to an Academy, or to other competent audience. It is all important to such a man that he should have the opportunity to attract and train a series of advanced students who will catch his spirit, and carry on his work long after his personal teaching has ceased. To provide a laboratory, or a library, or a salary derived from endowments, is not the whole of proper university action aimed at the production of competent investigators. The university service for such men must be wisely planned, and those plans must be executed with far-seeing skill. The endowment of research is becoming an attractive object for private benevolence; but the world has little experience of wise schemes for this purpose. The Corporation endeavored to make with Professor Richards an arrangement of his work which will leave him a teacher, and yet give him time and facilities for chemical research, and for creating a school of chemical investigators. After due consideration of the attractive proposal of the Prussian government Professor Richards decided to remain at Harvard University. It is a pleasant feature of this unique negotiation that it holds out a hope that

America may before long begin to repay to Germany some of the immense educational benefits which the German universities have conferred on the American.

It is clear that men of means, who reflect on the uses and results of educational endowments, are more and more inclining to endow research. Mr. T. Jefferson Coolidge, to whom the University is indebted for the Jefferson Physical Laboratory, and for many other large gifts, in September last sent to the President and Fellows a gift which yields an income of \$2,500 a year, to be used "primarily for laboratory expenses of original investigations by members of the Laboratory [Jefferson] staff: but the Director at his discretion may award therefrom an honorarium of not more than \$500 per annum for the private use of any person who (although receiving no salary from the University) may wish to carry on original investigations under his direction at the Jefferson Physical Laboratory. The results of such investigations shall appertain to the Laboratory, and when made public, the name of the laboratory and of the investigator shall accompany the publication; but no publication shall be made without the approval of the Director. The balance of this income is to be used only for meeting the legitimate expenses of original research, whether by professors or by students." Mr. Coolidge further provided that no part of this income should be paid for regular permanent salaries, or for routine expenses, his desire being to make an additional provision for physical research by paying the salaries of assistants exclusively devoted to such research. It is obvious that this is an intelligent experiment in the endowment of research; for it attempts to put skilled labor at the disposition of the learned professors who are giving their lives to the subject of physics, in the hope to make their learning more productive than it could be without such assistants.

It is also to be noticed that in endowing professorships, recent givers have more than once specified that they desired the professors on their endowments to have leisure enough to contribute to the advancement of learning in their several departments. The Gurney Fund has an express condition of this sort; and the gift of the Henry Lee Professorship Fund

was accompanied by the expression of a similar wish with regard to the incumbent of that professorship.*

The Director of the Physical Laboratory directs attention (p. 237) to the fact that the subject of Physics has undergone very great changes during the past twenty-five years. The present generation has conceived the waves of light and heat as electro-magnetic waves, and is thus connecting in intimate relationship phenomena which its predecessors treated as separate manifestations. He also observes that within five years the subject of Physical Chemistry has become of transcendent importance.

The Jefferson Physical Laboratory has trained thoroughly a small body of young men, all of whom are capable of making the most accurate sort of independent physical investigation. The names of eight such young men occur in the Director's report for 1900-01. As a rule, the four regular assistants in the Laboratory engage in independent investigation or coöperate with the professors in their researches. It is the purpose of the recent gift of Mr. T. Jefferson Coolidge already mentioned to add to the present body of assistants and advanced students in the Laboratory four or five assistants exclusively devoted to physical investigation.

The Division of Philosophy formulated in the spring of 1901 their desires for a new building to be devoted wholly to the work of the Division, and expressed their wishes and hopes in a printed circular which was reprinted in the June number of the Harvard Graduates' Magazine. Sketches drawn to scale were prepared to show the desired areas of the several floors, and the division of these areas into rooms. The Division also expressed their hope that the building might bear the name of Ralph Waldo Emerson. This plan is now to be drawn out with all necessary details by an architect; so that any intending benefactor, or group of benefactors, can see precisely what the Division of Philosophy think to be suitable accommodation for the varied and growing work

* "It is my wish that the person chosen to hold such professorship may have his duties as instructor made sufficiently moderate in amount to give him leisure to study and think and write and otherwise become a master and a leader in his subject."

of the Division. A site for the building has also been selected, — namely, the ground south of Sever Hall corresponding to the site of Nelson Robinson Jr. Hall north of Sever Hall. The Psychological Laboratory would occupy the whole of the third story of the proposed building ; and for this laboratory quiet is peculiarly desirable. A building placed about in the middle of the Quincy Street side of the Yard will be as far removed as possible from the highways which go towards Boston, and from the electric cars. It is very much to be wished that the hopes of the Division of Philosophy may be promptly fulfilled.

The Harvard Observatory possesses a collection of photographs on glass, each individual plate of which has the peculiar value that attaches to any useful object which could not be replaced if destroyed. The plates contain a large amount of information, acquired at known dates, which could not be obtained elsewhere. The entire collection is treated like a library, as regards catalogues, cross-references in the catalogues, and methods of consultation. It affords a complete history of the stellar universe for the past twelve years ; and of this history no other copy exists. If all the photographic plates at the other observatories of the world were brought together in one building, they would amount to but a small portion of the material stored at the Harvard Observatory. Facts from this photographic library are desired by, and are furnished to, astronomers in all parts of the world. For example, photographs taken in 1894 and 1896 of the remarkable planet Eros were greatly needed by astronomers after its discovery in 1898 ; the Harvard collection furnished 23, while not a single photograph was elsewhere to be found. The kind of use made of these photographs may be illustrated by the following statement : — After the recent discovery in Moscow, that a certain known star was a variable, a single week's examination of the plates in the Harvard collection yielded 20 observations of that star, extending over a period of twelve years and confirming the discovery of its variability.

This collection increases constantly, so that the brick building which contains it has now become wholly inadequate for

the proper storing and handling of the plates. A simple building of adequate size could be erected for \$50,000; and for such a building there is an excellent site close to the Observatory. The present building could then be converted to the use of the valuable library of the Observatory, which is now distributed through various rooms in a wooden building. An additional endowment of \$50,000 would greatly increase the usefulness of the photographic collection; because from the income of such a fund assistants could be paid who could constantly search the collection for the past history of new objects, or of other objects interesting though not newly discovered. In providing such an endowment, the giver would run no risk about the productiveness of his gift: he would protect from destruction and increase the usefulness of a collection which is already proved to be of the highest value to astronomical science.

In the Museum of Comparative Zoölogy important improvements were made during the year in the arrangement of the Library. Many volumes relating to Ethnology were transferred to the Peabody Museum, and nearly as many Botanical works to the Gray Herbarium and the other special libraries of Botany. Many duplicates have also been transferred to the general library of the University. On the other hand, by a vote of the Council of the University Library, more than 500 geological volumes and pamphlets were transferred from Gore Hall to the Library of the Museum. The object of these transfers is to make the Museum Library strictly a library for Geology and Zoölogy, and in these subjects to make it very complete.

After a lapse of some years the Department of Geology has begun again to take part in the publications of the Museum, three papers by officers and students in the Department of Geology being published in the Bulletin during the year under review.

The Director Emeritus of the Museum, accompanied by the Keeper of the Museum, has gone during the present winter to the Indian Ocean to continue there his study of coral formations, the islands of that ocean being the only groups of atolls in the world which Mr. Agassiz has not examined.

The Director of the Zoölogical Laboratory gives in his report (p. 257) a table of the attendance at each one of ten courses of instruction in Zoölogy which were given during the year, the number of Harvard students attending each course, and the number of Radcliffe students attending each of six courses being separately stated. It should be understood that the six courses in which Radcliffe students are enumerated are repeated especially for Radcliffe College. The Laboratory always contains a fair number of advanced students engaged in Zoölogical researches. The number of persons who took part in preparing the published Contributions from the Laboratory for the academic year 1900-01 is eleven, of whom one was a woman. All three of the Doctors of Philosophy recommended by this department in June, 1901, have positions as teachers of Biology: one in Columbia University, one in Yale University, and one in the Chicago University Academy.

The Chairman of the Department of Geology and Geography mentions in his report (p. 262) the interesting fact that of 46 successful applicants at the United States Civil Service examination for the position of Assistant Geologist on the United States Geological Survey, held April 23-24, 1901, 14 had received academic or graduate instruction at Harvard. This fact may be accepted as evidence that the instruction given in this department is intelligently directed to fit young men for actual service in geological fields.

The Fund for the Encouragement of Mexican and Central American Research, which is maintained by the annual contributions of a few persons (fourteen in 1900-01) interested in this subject, has enabled the Museum to carry on researches in various parts of Yucatan and Central America for several years. During the year under review three parties under competent direction were kept in the field, and valuable discoveries were made by each of the three parties. The same subscription has furnished means for publishing a series of illustrated quarto memoirs, and Mrs. Nuttall's work on "The Fundamental Principles of Old and New World Civilization." Under the auspices of the Museum, researches were also prosecuted in New Mexico, in California, and Mississippi.

It is highly desirable that the Museum should be extended to the west to make connection with the southwestern corner-piece of the University Museum. This is the only gap which remains to be filled to secure the completion of the entire plan laid out by Professor Louis Agassiz more than forty years ago. The Peabody Museum needs the additional room which this building would provide; and, moreover, it needs a large addition to its permanent funds.

On account of the new relations of the United States to tropical and semi-tropical islands and peoples, it is desirable that the anthropological instruction given at the University should be enlarged, along with the instruction in economic botany, government, and administration.

In the absence of the Curator of the Semitic Museum work on the new building for the Museum has not been pressed forward. It is expected that the building will be finished, and the cases made ready, before the return of the Curator in the early summer of 1902. In the meantime, the Curator is buying valuable objects for the Museum during his present travels in Europe and Syria. The Curator, writing from Rome, urges (p. 275) that Harvard University be provided for a term of years with at least \$10,000 a year with which to undertake Egyptian or Assyrian exploration on its own account, and cites the example of the University of California, which is now employing in the field two Harvard graduates. The University of Pennsylvania has had great success in Babylonia-Assyria, and a Babylonian expedition has just been organized in the interests of the Smithsonian Institution with a Harvard graduate as leader. The Curator also points out that Palestine as a field for exploration has been comparatively neglected. He urges that Harvard University, beside sending out its learned men to do good service in these fields for other institutions, should enrich its own stores.

In 1900-01 the Fogg Art Museum received by gift or for deposit several original works of high merit, partly sculpture, partly paintings. By purchase the Museum acquired during the year a few electrotype reproductions, 858 photo-

graphs, and 266 slides. The cataloguing of photographs and slides has kept pace with the accessions.

In his previous report the Director suggested that the second story of the Museum should be raised, in order to get space and light for the proper exhibition of pictures. He would now prefer a suitable gallery for pictures near the present building and connected with it by a short passageway, and having a western entrance which would give the Department of Architecture convenient access to the collections of the Museum.

The Mineralogical Collection remains nearly stationary, there being no money with which to buy minerals, and the number of gifts received being small. This is one of the oldest collections in the possession of the University, and one which was much enlarged and improved during the administration of Professor J. P. Cooke, and especially between 1850 and 1880. The collection is now far better lodged than ever before; but, from lack of money, the Corporation have been obliged to allow many opportunities to enrich it to pass unimproved.

The number of students in Radcliffe College increases slowly, but with reasonable steadiness. In 1901, 116 candidates were admitted as Freshmen, against 93 in 1900. Sixty-one Graduate students registered during the year, 47 of whom were from other colleges. It is astonishing how much good work has been done by Radcliffe College with its slender material resources. Now that its future, as regards its grounds, has been decided, it may hope to receive two kinds of much needed gifts, — additional buildings, and additional endowment. Whoever makes a gift to Radcliffe College can feel assured that the return on his gift will be prompt and large; because he will give to an institution which enjoys without payment many of the acquired facilities of Harvard University and much of its prestige.

The first of the Radcliffe dormitories has now been completed and occupied; and its entire success should lead to the erection of several more of the same type. With registered students to the number of 457, in 1900-01, Radcliffe College should certainly have dormitories for the accommodation of at least 150 students.

From the fund collected by the University in 1900 for the instruction and maintenance of Cuban teachers, there remained for use during the summer of 1901 the sum of \$2,331. The most appropriate use of this money was the further instruction of some small body of Cuban teachers. Accordingly, Mr. Edward Morales, who was the Secretary of the first Cuban expedition, conducted from Cuba a body of nearly 80 teachers, who were to receive at Cambridge instruction in English in several grades. It was understood that so far as possible the selection should be made from teachers under thirty years of age, and from those who already had some acquaintance with English. On their arrival in Cambridge, six graded sections were arranged,—three for men and three for women, there being 24 men and 53 women. The classes met from 8.30 to 9.30 and from 10.30 to 11.30 every day except Sunday; and frequent compositions in English were required of them. Moreover, study hours were arranged from 1 until 3 every afternoon, during which time one of the teachers was present to assist the Cubans in the preparation of their lessons. The attendance at the morning classes, and also at the study hours, was all that could be desired. At the end of six weeks, written examinations were held, at which several members of the different sections attained the equivalent of 90 to 95 per cent. A certificate was given to every member of these classes which stated for each person the grade of the class attended, the degree of punctuality in attendance, and the mark at the examination. The object of the course was to bring about for every student a distinct improvement in both spoken and written English; and this object was in good measure attained. The names of the teachers of the Cuban classes will be found in the Appendix, page 313.

The expedition differed from that of the preceding summer in several respects. It was small, and easily manageable, and consisted of persons who themselves paid a considerable portion of their expenses. They also devoted themselves wholly to the study of one subject while in Cambridge, just as students in the regular Summer School for Americans devote themselves to one subject, as a rule. Except that they needed a kind of instruction in English which Americans do not need, the

members of this second expedition might very properly have been members of the regular Summer School.

The small balance of the original Cuban fund which still remains in the hands of the Bursar will be used during the current year in aid of a few persons who were connected with the expedition of 1900, and desired to pursue their studies at the University.

The summer course in physical training has been very useful in preparing instructors for a great variety of other institutions. The Director of the Hemenway Gymnasium, Dr. D. A. Sargent, has not only maintained a summer course of instruction in physical training ever since the summer of 1887, but, by his numerous inventions of gymnastic apparatus and by his contributions to anthropological science, has been influential in building up all over the country schools, or departments, of physical training, and in providing them with good apparatus and competent instructors. The directors of the departments of physical training in a large number of colleges, universities, and school systems scattered all over the United States have received a valuable part of their training from Dr. Sargent's summer school. Among his students have also been several persons who have been instrumental in introducing the present methods of gymnastic instruction into the Young Men's Christian Associations of the United States. This is a strong case of the diffusion over an immense area of one teacher's ideas and methods through the labors of a large body of capable disciples.

Great improvements were made during the summer of 1901 in Memorial Hall. The debt of the Dining Hall Association to the College having been reduced, by a series of annual payments for the reduction of the principal, to \$12,522.66, the Association felt able to borrow some more money from the general treasury. The Directors of the Association having applied to the Corporation for leave to introduce a cold storage plant and an electrical lighting plant, and also for leave to rearrange the screen and the tables on the floor of the Hall, the Corporation requested the Association to replace at the same time all the wooden partitions in the basement, and the

wooden floor of the Hall itself, by brick partitions and a fire-proof floor. This the Association undertook to do; and by Christmas, 1901, these improvements were effected. As heretofore, the Association pays interest on the advances made by the Corporation, and an annual sum towards the extinction of the debt. The term-time use of the Hall by the Association was not interrupted, and the improvements in the plant fully realize the expectations of the Directors. The new security against fire is not only a relief from anxiety lest the Hall be injured or destroyed, but a relief also from fear lest the students should be deprived of the use of the Hall during term-time. To lose the use of either Memorial Hall or Randall Hall during term-time would be a very serious crippling of the Cambridge departments of the University.

At the close of the year under review, it was announced to the public that the University is indebted to Mr. and Mrs. Nelson Robinson, of New York, for the gift of the new building on Quincy Street for the Department of Architecture; and that this building is erected in memory of their son, Nelson Robinson, Jr., who was a member of the Class of 1900. This building has been built from plans of Messrs. McKim, Mead & White in the most thorough manner possible, and has been furnished throughout, and provided with a large number of casts, prints, and photographs, by Mr. and Mrs. Robinson. They also gave, in February last, a permanent endowment fund of \$300,000, the income of which is to be used, first, to carry on the building in a thoroughly satisfactory manner with adequate service and assistance, and secondly, to keep its equipment in first-class condition, and to improve it year by year. \$4,000 of the yearly income is to be added to the principal, to provide against increasing expenses and the possible decreasing rate of interest on the fund. The income is next to provide one, two, or more travelling fellowships. Since a permanent provision is made for a yearly addition to the principal, Mr. and Mrs. Robinson further mention five other uses to which the income of this fund may be applied, all of them connected with the Department of Architecture, except the last, which is Retiring Allowances. These dispositions make

it certain that the new hall and its contents will be made permanently useful without expense to the Corporation, and will be maintained in the highest state of efficiency. All imaginable adverse chances are provided against as completely as thoughtful foresight can contrive. The Department of Architecture will enter upon the use of these great gifts with the opening of the calendar year 1902.

The Harvard Union, the great gift of Henry Lee Higginson, was opened a few days before the beginning of the current academic year. Its success has been immediate and decided, except that a few hundred more undergraduate members are still desirable, in order to make sure that its income will meet its expenditures. Many good uses have already been found for the building; and the experience of a single year is likely to solve all the problems which have arisen concerning its management, and to answer satisfactorily all surviving doubts as to its utility, if any there be. Since the Union has hundreds of members who are not connected with the University, the building with the ground on which it stands is taxable by the city. The Union also pays a moderate ground rent to the University. It therefore brings no burden whatever on the University treasury.

During the year 1900-01, an extraordinary number of buildings were under construction for the University, — namely, the Nelson Robinson Jr. Hall for Architecture, the Semitic Museum, the southwestern corner of the University Museum, the Simpkins Laboratory which makes part of the Rotch Building, Pierce Hall, and the Stillman Infirmary. In addition, the Harvard Union was being erected. These buildings, with their furniture and fittings, will cost at least \$850,000. Only the Harvard Union can be said to be finished at this date (Jan. 7, 1902); but it is expected that all of them will shortly be occupied. Robinson Hall is well endowed by its givers; the Harvard Union is not to be conducted at the expense of the University; and for the support of the Stillman Infirmary, a few small gifts have been already received. But there remain four buildings, which together cost about \$450,000, for the running expenses of which no provision has been made.

It is obvious that a heavy new charge is to be brought upon the Corporation during the coming year. Since the number of students in the Department of Arts and Sciences has increased only by four persons, and the endowments applicable in this department cannot be expected to yield a higher rate of interest than they yielded in the year 1900-01, it is obvious that possession of these admirable new buildings is not without its embarrassments.

The President was given leave of absence for five months of the year 1900-01, from November 21 to April 21; and during his absence the Senior Fellow of the Corporation, Henry Pickering Walcott, M.D., was appointed Acting President. Dr. Walcott attended the meetings of all the Faculties, and the meetings of the Board of Overseers. Having received \$2,500 for this service, he returned the money to the Corporation to establish a fund, "the income of which shall be used for the purpose of assisting such sick students of the University as may be admitted to the Stillman Infirmary for treatment, and are not able to meet its necessary charges." It has been supposed by some friends of the University that the administrative department was but ill-organized and under-manned. The Corporation, therefore, observed with satisfaction that the entire machinery of the University ran smoothly without interruption during the five months' absence of the President. The fact is that the growth of the administrative department of the University has kept pace with the increase in the number of teachers and students, and that a proper system of divided responsibilities, with authority to match responsibility, exists throughout the University. This development of the administration has been indispensable; because much greater administrative attention is now given to the individual student than was given twenty years ago, or forty years ago, when the number of students was much smaller. With the present administrative force, the number of students in the University can grow far beyond its present limits without requiring additions to the administrative staff, except in its lower grades.

In May, 1901, the Corporation received from the Board of Overseers the following vote: "That, in the opinion of this Board, it is expedient to create the office of permanent Secretary to the President; that the salary of the office shall be sufficient to secure a competent and permanent officer; that he shall have the power in the name of the President to do such acts as the President shall request, and to discharge such duties as the President shall delegate to him." The object of the Board of Overseers was to relieve the President of some of his present functions, and to place in his office a young man who should learn the routine of the office and its general methods, and thus be able to transmit to a successor the detailed administrative arrangements which the present incumbent has gradually learned or introduced in the course of the last thirty-two years. The Corporation adopted the advice of the Overseers; and on the first of August, 1901, Mr. Jerome Davis Greene, A.B. (Harv.) 1896, was appointed Secretary to the President. An experience of five months has satisfied the President that the action of the Board of Overseers was wise, and that the purposes of the Board can be well fulfilled.

Early in January, 1901, the Corporation and Board of Overseers appointed a Joint Committee to prepare and present to the General Court a bill to provide for enlargement of the suffrage for Overseers, which is now restricted to Bachelors and Masters of Arts and holders of honorary degrees. The committee agreed upon a bill by which the Legislature should give to the Corporation and Board of Overseers power to enlarge the suffrage at their discretion, the consent of both Boards being required for every enlargement. This bill passed the House of Representatives by a large majority, but was first delayed in the Senate, and then loaded there with objectionable amendments; so that the friends of the measure at last requested that it be referred to the next General Court.

Of the ordinary degrees conferred in 1900, 553 gave the right of suffrage, and 411 did not give that right. In 1901, 608 gave the right of suffrage, and 423 did not. In 1865, the year of the Act which defines the existing suffrage for Overseers, the Masters of Arts were, almost without exception, persons who had already received the Harvard degree of Bachelor of Arts.

To-day a large proportion of them are persons who have not received the Harvard degree of Bachelor of Arts ; and of these graduates of other colleges, more than half spend only one year in Cambridge. The Dean of the Graduate School reports (p. 119) that men who resort to that School for one year "are likely to continue to be a majority of its students." He also reports (p. 124) that 62 per cent. of the students of the School do not hold the Harvard first degree in Arts. That the suffrage should be conferred on these Masters of Arts, and should not be conferred upon the graduates of the Scientific School, who, as a rule, have spent four years in Cambridge, is only one of the extraordinary anomalies created by applying the legislation of 1865 without modification to the new conditions of 1901. A graduate of the Law School, or of the Divinity School, who was previously a graduate of some other college than Harvard, has probably spent three full years in Cambridge, and has boarded at Memorial Hall or Randall Hall, used the Gymnasium and the libraries, and been welcomed to any College teams and crews for which he was fit ; yet he is denied the suffrage, when many Masters of Arts, who were Bachelors of Arts of other colleges, obtain it on one year of residence in Cambridge. Hereafter such graduates of the Divinity, Law, or Scientific School will probably have been for years members in full standing of the new Harvard Union. The Joint Committee of the two Boards will advocate their bill again at the ensuing session of the Legislature.

At the end of the year 1899-1900 there was a deficit of \$36,669.51 in the account called "University, College, Scientific School, and Library," and in the preceding year there had been an even larger deficit. In the fall of 1900, the Corporation, therefore, took all possible measures to reduce expenses, and to bring in new annual resources, for this very important account. A portion of the Henry T. Morgan Fund, an unrestricted fund which dates from 1883, had been applied to the support of fellowships in the Graduate School. The Corporation voted to discontinue this application, and use the whole income of the Fund towards administrative expenses in the University Library. To replace the Morgan Fellowships, they voted to establish from the income of the Edward Austin Fund

four Edward Austin Fellowships of \$500 each. The Corporation also abolished ten University Scholarships in the Graduate School, four Normal School Scholarships in the Lawrence Scientific School, and eight University Scholarships in the Lawrence Scientific School, from the close of the year 1900-01. They imposed a fee of \$5 on candidates at the admission examinations for the College and the Scientific School when the examination is passed in Cambridge. This fee has heretofore been paid only by candidates examined at other places than Cambridge. They ordered that from and after the close of the academic year 1900-01, all students taking the degree of Doctor of Philosophy, Doctor of Science, Master of Arts, or Master of Science, and those taking the degree of Bachelor of Arts or Bachelor of Science in one, two, or three years shall be charged a fee of \$20. The object of this last order was to collect an additional fee from persons who take one of the degrees of the University after a residence comparatively short.

It was a great satisfaction to the Corporation that the receipts of the University in the year under review were a little larger than the expenditures, and particularly that the account called "University, College, Scientific School, and Library" showed a small surplus for the year. The deficits of the two preceding years in this account had amounted together to \$78,497.45. This account paid the Veterinary School deficit of \$8,456.45; but it meets this charge for the last time.

The total endowment of the University continues to increase in three lines:—First, the number of buildings increases with some rapidity, and it is noticeable that the style of construction has undergone within ten years a great change for the better, so that all the newer buildings of the University are practically fireproof. Secondly, the total of the investments of the University yielding an income steadily increases;—thus, the gain between August 1, 1899, and July 31, 1901, was \$1,352,080.05. Thirdly, the collections of books, specimens, apparatus, and other appliances for teaching, increase from year to year. Nevertheless, many urgent needs weigh upon the minds of the Faculties and the governing boards, and impair in a very significant measure the usefulness of the University. The income of ten millions of dollars could be applied in a week to

University objects long known and thoroughly studied ; and even then the President and Fellows could not think of relaxing for a moment the cautious and frugal methods in which they have heretofore used the money entrusted to them.

Two interesting facts may be seen in the Treasurer's Statement : — First, the Medical School now has a larger endowment than any other professional department of the University. This fact is the more striking, because thirty years ago it had the smallest endowment among the professional departments. In 1869–70, the invested funds applicable in the Medical School amounted to \$45,136.54. On the 31st of July, 1901, the funds applicable in the Medical School amounted to \$1,098,489.74. Secondly, the benefactors of the University come from a wider territory than they used to, and represent a much greater variety of racial stock, religious opinion, and professional, commercial, or industrial connection.

Graduates of the College who take an interest in the completeness and clear arrangement of the Treasurer's Statement will be gratified to see in the table of Funds and Balances (pp. 41–53) that each fund now bears the date at which it was received, and that the arrangement under the several titles is an alphabetical one ; so that any particular fund can be easily found, if its established name and the department to which it belongs be known. This improvement has been brought about by the Comptroller, Mr. Allen Danforth. It involved much careful investigation ; and the result is a distinct contribution to the history of the University.

The attention of the Overseers is respectfully invited to the following reports of the Deans of the Faculties and Schools, and the Directors of the Scientific establishments. The President does not attempt to summarize these reports even in the briefest manner : they contain many interesting and important facts, and valuable discussions of academic problems, methods, and results.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, 7 JANUARY, 1902.

REPORTS OF DEPARTMENTS.

THE FACULTY OF ARTS AND SCIENCES.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — As Dean of the Faculty of Arts and Sciences I have the honor to submit the following report for the academic year 1900–01.

INSTRUCTION.

I first present the usual account of the instruction provided by the Faculty or given under its authority, including the instruction given in the year 1900–01, the courses given in the Summer School of 1901, and the most important features of the scheme of instruction announced for the present year.

Instruction given in 1900–01.

The following list includes all the courses of instruction that were *actually given* under the authority of the Faculty in 1900–01, with a statement of the number of students of various classes and departments in each course. In my reports for the two preceding years descriptions of the courses were given with some fulness of detail, mainly for the purpose of showing the methods of teaching now in use among us. As these methods do not vary greatly from year to year it seems unnecessary to repeat the record. Fuller particulars of the contents of the several courses may be found in the Annual Catalogue for 1900–01, pp. 347 ff., where the courses offered for that year, but withdrawn because not taken by a sufficient number of competent students, or for some other reason, are also given.

Courses of Instruction are classed as *full courses* or *half-courses*, according to the estimated amount of work in each and its value in fulfilling the requirements for a degree. Half-courses are designated in the following list by the abbreviation *hf*. All others were full courses with the exception of German *B*, which counted as two courses. In the 'courses of research,' however, the work of a particular student is sometimes increased by special arrangement so

that the course counts for him as the equivalent of two, three, or four courses. The figure 1 or 2, attached like an exponent to the number or letter of a course, indicates that the course was given in the first or in the second half-year only. Courses not so designated extended through the year. A double dagger (‡) indicates that the course was open, under certain conditions, to properly qualified students of Radcliffe College.

The following abbreviations are used to designate the students in the several courses: Instr. for Instructor; Gr. for Graduate Student; Se. for Senior; Ju. for Junior; So. for Sophomore; Fr. for Freshman; Sp. for Special Student of Harvard College; Sc. for Scientific Student; Di. for Divinity Student; Law for Law Student; Me. for Medical Student; Bu. for Bussey Student; R. for Radcliffe Student.

COURSES OF INSTRUCTION GIVEN IN 1900-01.

Semitic Languages and History.

For Undergraduates and Graduates:—

1. Professor LYON, assisted by Dr. HAYNES. — Hebrew (elementary course).
1 Gr., 2 Se., 1 Ju., 1 So., 3 Di. Total 8.
12. Professor LYON. — History of Israel, political and social, to the capture of Jerusalem by the Romans.
12 Se., 10 Ju., 28 So., 2 Sp., 6 Sc., 4 Di. Total 62.
16. Professor TOY. — History of pre-Christian Hebrew Literature.
1 Se., 5 Di. Total 6.
18. Professor TOY. — History of the Hebrew Religion, with comparison of other Semitic religions. 2 Gr., 2 Di. Total 4.
- 14 hf. Professor TOY. — History of the Spanish Califate. The Barbary States. Moslems in Sicily. 3 Se., 5 Ju., 2 So., 2 Sc. Total 12.

Primarily for Graduates:—

- ‡2. Professor TOY. — Hebrew (second course). Interpretation of parts of the Prophets and the Poetical Books. 3 Se., 1 So., 1 Di. Total 5.
- ‡5. Professor LYON. — Assyrian (second course). The Chaldean Epic. Letters and commercial documents. 1 Di. Total 1.
- ‡7. Professor TOY, assisted by Dr. HAYNES. — Arabic. 1 Gr. Total 1.
- ‡8 hf. Professor TOY. — Arabic (second course). The Moallakāt; Motenebbi; Ibn Haldun; the Korān. 1 Gr. Total 1.
- 9 hf. Professor TOY. — Ethiopic. 2 Sp. Total 2.

Indo-Iranian Languages.

For Undergraduates and Graduates:—

- 1^h hf. Professor LANMAN. — Elements of Sanskrit.
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1. Professor LOWELL, assisted by Messrs. WARREN, NEWHALL, FULLERTON, and BURNHAM. — Constitutional Government (elementary course). 1 Se., 4 Ju., 126 So., 273 Fr., 23 Sp., 23 Sc. Total 450.

For Undergraduates and Graduates:—

4. Professor STROBEL, assisted by Mr. A. L. RICHARDS. — Elements of International Law. 5 Gr., 34 Se., 27 Ju., 4 So., 1 Sc., 1 Law. Total 72.
- 7¹ hf. Professor MACVANE. — Leading Principles of Constitutional Law. Selected cases (American and English). 2 Gr., 11 Se., 6 Ju., 2 So., 1 Law. Total 22.

Primarily for Graduates:—

- 8¹ hf. Dr. LAPSLEY. — Legal Institutions of Europe in the Middle Ages. Early Germanic Law; Mediaeval French and German Law; Revival of the Roman Law. 1 Gr., 1 Se. Total 2.
10. Professor LOWELL. — Modern Governments. Studies in existing Political Systems and in the influence of Political Parties. 12 Gr., 15 Se., 20 Ju., 5 So., 1 Sp., 2 Sc. Total 55.
- ‡12. Professor HART. — The American Political System, national, state, and municipal. 6 Gr., 7 Se., 1 Ju., 1 So., 1 Sp. Total 16.
14. Professor J. B. THAYER. — Constitutional Law in the United States. 3 Gr. Total 3.
15. Professor STROBEL. — International Law as administered by the Courts. 3 Gr. Total 3.
- 18¹ hf. Mr. WYMAN. — Administrative Law in the United States. 1 Gr., 2 Se., 1 Jr., 18 Law. Total 22.

Economics.*Primarily for Undergraduates:—*

1. Professor TAUSSIG, Drs. SPRAGUE and ANDREW, and Messrs. BEARDSLEY and PATTEN. — Outlines of Economics.
23 Se., 70 Ju., 257 So., 29 Fr., 25 Sp., 35 Sc., 1 Law, 2 Bu. Total 442.

For Undergraduates and Graduates:—

2. Asst. Professor CARVER. — Economic Theory in the Nineteenth Century.
6 Gr., 15 Se., 16 Ju., 5 So., 2 Sp., 1 Sc. Total 45.
3. Asst. Professor CARVER. — The Principles of Sociology. Development of the Modern State, and of its Social Functions.
9 Gr., 22 Se., 8 Ju., 14 So., 3 Sp., 1 Di. Total 57.
10. Professor ASHLEY. — The Mediaeval Economic History of Europe.
6 Gr., 4 Se., 1 Ju. Total 11.
17. Professor ASHLEY. — The Economic Organization and Resources of European Countries.
5 Gr., 14 Se., 9 Ju., 3 So., 1 Sp., 2 Sc. Total 34.
6. Professor TAUSSIG. — The Economic History of the United States.
9 Gr., 63 Se., 68 Ju., 13 So., 4 Sp., 7 Sc. Total 164.
- 9² hf. Mr. W. F. WILLOUGHBY. — The Labor Question in Europe and the United States. The Social and Economic Condition of Workingmen.
3 Gr., 53 Se., 40 Ju., 35 So., 3 Fr., 6 Sp., 6 Sc. Total 146.
- 9a² hf. Mr. W. F. WILLOUGHBY. — Provident Institutions. Workingmen's Insurance, Friendly Societies, Savings Banks.
1 Gr., 13 Se., 5 Ju., 2 So., 1 Sp. Total 22.
- 5¹ hf. Mr. MEYER. — Railways and other Public Works, under Public and Corporate Management. 4 Gr., 52 Se., 17 Ju., 4 So., 1 Sp., 8 Sc. Total 86.
- 5² hf. Mr. MEYER. — Railways and other Public Works (advanced course).
3 Gr., 4 Se., 1 Ju., 1 So. Total 9.
- 8¹ hf. Dr. ANDREW. — Money.
3 Gr., 56 Se., 41 Ju., 8 So., 1 Fr., 4 Sp., 9 Sc. Total 122.
- 12² hf. Dr. SPRAGUE. — Banking and the history of the leading Banking Systems.
4 Gr., 51 Se., 43 Ju., 16 So., 4 Sp., 9 Sc., 1 Law. Total 128.
- 12a¹ hf. Mr. MEYER. — International Payments and the Flow of the Precious Metals.
2 Gr., 9 Se., 4 Ju., 1 Sc. Total 16.
- 18¹ hf. Mr. W. M. COLE. — The Principles of Accounting.
43 Se., 4 Ju., 2 So., 1 Sp., 4 Sc., 1 Law, 1 Me. Total 56.

Primarily for Graduates:—

- 19² hf. Professor WAMBAUGH. — A General View of Insurance.
6 Se., 1 Sp., 2 Sc. Total 9.
- 13² hf. Asst. Professor CARVER. — Methods of Economic Investigation.
4 Gr., 6 Se. Total 10.
- ‡20d¹ hf. Professor TAUSSIG. — Adam Smith and Ricardo.
7 Gr., 5 Se. Total 12.

THE SEMINARY IN ECONOMICS.

The results of investigations pursued in connection with Courses 20a, 20b, 20c, and 20e were presented and discussed. 8 Gr., 2 Se. Total 10.

Philosophy.*Primarily for Undergraduates:—*

- 1a. Professor MÜNSTERBERG and Dr. MILLER, assisted by Dr. B. RAND.—
General Introduction to Philosophy. Psychology. Logic.
1 Gr., 6 Se., 51 Ju., 83 So., 28 Fr., 13 Sp., 26 Sc. Total 208.
- 1b. Professors PALMER and ROYCE, assisted by Dr. B. RAND.—Outlines of
the History of Philosophy, Ancient and Modern.
3 Gr., 2 Se., 84 Ju., 51 So., 8 Fr., 9 Sp., 4 Sc., 1 Di., 1 Me. Total 163.

For Undergraduates and Graduates:—

- 2¹ hf. Dr. MACDOUGALL.—Advanced Psychology.
6 Gr., 4 Se., 4 Ju., 2 So., 2 Sp. Total 18.
- 14² hf. Dr. MACDOUGALL.—Experimental Psychology (elementary laboratory
course). The psychology of sensation, and of the elementary mental
processes. 8 Gr., 5 Se., 5 Ju., 1 So., 2 Sp., 1 Sc. Total 22.
4. Professor PALMER.—Ethics. The Theory of Morals, considered construc-
tively. 15 Gr., 36 Se., 11 Ju., 3 So., 3 Sp., 3 Sc., 3 Di. Total 74.
5. Professor PEABODY and Dr. B. RAND.—The Ethics of the Social Questions.
The problems of Poor-Relief, the Family, Temperance, and various
phases of the Labor Question, in the light of ethical theory.
4 Gr., 55 Se., 25 Ju., 14 So., 5 Sp., 8 Sc., 8 Di. Total 119.
- 10³ hf. Asst. Professor SANTAYANA.—Aesthetics. The Philosophy of Art, with
a survey of aesthetic theories.
4 Gr., 24 Se., 12 Ju., 7 So., 1 Sp., 3 Sc., 1 Law. Total 52.
9. Professor ROYCE.—Metaphysics. The fundamental problems of Theo-
retical Philosophy. Realism and Idealism; Freedom, Teleology, and
Theism. 12 Gr., 11 Se., 2 Ju., 1 Sp., 3 Di. Total 29.
- 15¹ hf. Professor ROYCE.—Theory of Knowledge. The Processes of Concep-
tion, Judgment, and Reasoning. The Relations of Thought and Reality.
The Elements of Symbolic Logic. 8 Gr., 2 Se., 1 Ju. Total 11.
3. Dr. MILLER.—The Philosophy of Nature, with especial reference to Man's
place in Nature. The Fundamental Conceptions of Science; the rela-
tion of Mind and Body; Evolution.
2 Gr., 3 Se., 3 Ju., 2 So., 1 Sc., 1 Di. Total 12.
12. Asst. Professor SANTAYANA.—Greek Philosophy, with especial reference
to Plato. 2 Gr., 13 Se., 12 Ju., 2 So., 2 Sp. Total 31.
- 11¹ hf. Dr. MILLER.—Descartes, Spinoza, and Leibnitz.
5 Gr., 9 Se., 1 Ju. Total 15.
- 11² hf. Dr. MILLER.—The History of English Philosophy from Locke to Hume.
2 Gr., 6 Se., 3 Ju., 1 Sp. Total 12.
- 8² hf. Dr. W. H. SHELDON.—The Philosophy of Kant. Kant's Critique of
Pure Reason. 2 Gr., 2 Se., 2 Ju., 1 So., 1 Sp. Total 8.

SEMINARY COURSES.

Primarily for Graduates :—

- ‡20a. Professor MÜNSTERBERG and Dr. MACDOUGALL.—Psychological Laboratory. Experimental investigations. 15 Gr., 4 Se. Total 19.
- 20b. Professor MÜNSTERBERG.—Psychological Seminary. Problems of Comparative and Social Psychology. 21 Gr., 2 Se., 1 Me. Total 24.
- ‡20c. Professor ROYCE.—Metaphysical Seminary. The Problems of Logic. Studies of various fundamental conceptions of Philosophy and of Science. 4 Gr., 1 Me., 1 Instr., 1 R. Total 7.
- ‡20d. Professor PALMER.—Ethical Seminary. The Ethics of Idealism. The Development of German Ethics in Kant, Fichte, and Hegel. 5 Gr., 1 Se. Total 6.
- 20e. Professor PEABODY.—Sociological Seminary. The Christian doctrine of the Social Order. 1 Se., 10 Di., 1 Law. Total 12.
- 20f. Asst. Professor SANTAYANA.—Aesthetical Seminary. Pleasure and pain, the emotions and the aesthetic feelings. 4 Gr., 1 Se. Total 5.
- 20h. Asst. Professor SANTAYANA.—Studies in Aristotle's Metaphysics. 1 Gr. Total 1.

Education.

For Undergraduates and Graduates :—

1. Mr. A. O. NORTON.—The History of Educational Theories and Practices. 7 Gr., 6 Se., 7 Ju., 5 So., 1 Sp., 7 Sc. Total 33.
- 2¹ hf Asst. Professor HANUS.—Introduction to Educational Theory. Discussion of Educational Principles. 8 Gr., 18 Se., 6 Ju., 3 So., 8 Sc. Total 43.

Primarily for Graduates :—

- ‡3. Asst. Professor HANUS, assisted by Mr. A. O. NORTON.—Organization and Management of Public Schools and Academies. Supervision, Courses of Study, and Instruction. Visits to schools. 16 Gr., 7 Se., 3 Sc. Total 26.
- ‡4² hf. Asst. Professor HANUS.—The School Systems of England, France, and Germany. 5 Gr., 2 Se., 1 Ju., 1 Sp., 1 Sc. Total 10.
- ‡10a² hf. Asst. Professor C. P. PARKER.—The Methods and Equipment of a Teacher of the Classics in Secondary Schools. 1 Gr., 4 Se., 2 Ju., 2 R. Total 9.
- ‡10b² hf. Dr. BIERWIRTH.—The Methods and Equipment of a Teacher of German in Secondary Schools. 3 Se., 1 R. Total 4.
- ‡20a. Asst. Professor HANUS.—Pedagogical Seminary. Contemporary Problems in Education. 12 Gr. Total 12.

The Fine Arts.

Primarily for Undergraduates :—

1. Professor CHARLES H. MOORE, assisted by Mr. MOWER.—Principles of Delineation, Color, and Chiaroscuro, with some consideration of historic forms of art, and the conditions which have influenced them. 3 Se., 4 Ju., 13 So., 16 Fr., 6 Sp., 15 Sc., 6 Bu. Total 63.

2. Professor CHARLES H. MOORE.—Principles of Design in Architecture, Sculpture, and Painting, as exemplified in the Arts of past ages.

1 Gr., 2 Se., 4 Ju., 1 So., 2 Sp., 5 Sc., 2 Bu. Total 17.

For Undergraduates and Graduates:—

3. Mr. EDWARD ROBINSON, assisted by Mr. VON MACH.—The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phoenicia, in their relation to Greek Art.

6 Gr., 86 Se., 121 Ju., 121 So., 11 Fr., 13 Sp., 29 Sc. Total 387.

4. Professor CHARLES H. MOORE.—The Fine Arts of the Middle Ages and the Renaissance.

2 Gr., 63 Se., 60 Ju., 43 So., 2 Fr., 5 Sp., 16 Sc., 1 Law. Total 192.

Architecture.

The courses in Architecture are intended primarily for students in the Lawrence Scientific School, and only Courses 1a, 1b, and 1c may be counted towards the degree of A.B.

- 1a. Professor H. L. WARREN.—Technical and Historical Development of the Ancient Styles, with especial reference to Classic Architecture.

1 Gr., 2 Se., 7 Ju., 6 So., 1 Sp., 11 Sc., 3 Bu. Total 31.

- 1b. Professor H. L. WARREN.—Technical and Historical Development of the Mediaeval Styles of Architecture.

8 Se., 1 Ju., 13 Sc. Total 22.

- 2a. Professor H. L. WARREN, and Messrs. NEWTON and SWAN.—Elementary Architectural Drawing. The Orders.

2 Ju., 1 So., 10 Sc., 4 Bu. Total 17.

- 3a. Professor H. L. WARREN and Mr. NEWTON, assisted by Mr. SWAN.—Freehand Drawing.

2 Ju., 1 Sp., 8 Sc., 2 Bu. Total 13.

- 3b. Professor H. L. WARREN and Mr. NEWTON, assisted by Mr. SWAN.—Freehand Drawing (second course).

1 Gr., 6 Sc. Total 7.

- 3c. Professor H. L. WARREN and Mr. NEWTON.—Freehand Drawing (third course).

7 Sc. Total 7.

- 4a. Professor H. L. WARREN and Mr. NEWTON, assisted by Mr. SWAN.—Elementary Architectural Design.

1 Gr., 9 Sc. Total 10.

- 4b. Professor H. L. WARREN and Mr. NEWTON.—Architectural Design (second course).

6 Sc. Total 6.

- 4c. Professor H. L. WARREN and Mr. NEWTON.—Architectural Design (advanced course).

5 Sc. Total 5.

- 5^hf. Mr. NEWTON.—Building Construction: Carpentry.

1 Ju., 12 Sc. Total 13.

- 6^hf. Mr. GARBUTT.—Modelling.

1 Gr., 9 Sc. Total 10.

- 7^hf. Dr. ROSS.—Theory of Design. Pure Design (balance, rhythm, harmony).

1 Gr., 3 Se., 1 Ju., 2 So., 7 Sc. Total 14.

Landscape Architecture.

1. Mr. OLMSTED (with occasional lectures by Professor SHALER).—History and Principles of Landscape Design.
12 Se., 4 Ju., 2 So., 2 Sp., 14 Sc., 2 Bu. Total 36.
2. Messrs. OLMSTED and SHURTLEFF.—Practice in Landscape Design (first course).
4 Sc., 2 Bu. Total 6.

Music.*For Undergraduates and Graduates:—*

1. Mr. SPALDING.—Harmony.
4 Se., 7 Ju., 4 So., 11 Fr., 1 Sp., 4 Sc. Total 31.
2. Mr. SPALDING.—Advanced Harmony. Counterpoint.
3 Se., 5 Ju., 5 So., 1 Fr. Total 14.
3. Professor PAINE.—History of Music.
8 Se., 6 Ju., 4 So., 3 Fr., 2 Sp., 1 Sc. Total 24.
- 4 *hf.* Mr. SPALDING.—Musical Form, with analysis of the works of the great composers.
5 Se., 6 Ju., 2 So. Total 13.
7. Professor PAINE and Mr. SPALDING.—Instrumentation.
3 Se., 1 Ju., 1 So. Total 5.

Primarily for Graduates:—

- ‡5. Professor PAINE.—Canon and Fugue. Free Thematic Music.
1 Se., 1 So. Total 2.
- ‡6. Professor PAINE.—Advanced Canon and Fugue and Free Composition.
2 Se., 1 So. Total 3.

Mathematics.*Primarily for Undergraduates:—*

- F. Mr. WHITTEMORE and Mr. J. L. COOLIDGE.—Trigonometry and Plane Analytic Geometry. 4 Se., 2 Ju., 12 So., 60 Fr., 6 Sp., 1 Sc. Total 85.
- A¹ *hf.* Mr. ASHTON.—Logarithms. Plane and Spherical Trigonometry.
3 Se., 3 Ju., 13 So., 11 Fr., 1 Sp., 2 Sc., 1 Bu. Total 34.
- B² *hf.* Mr. ASHTON.—Plane Analytic Geometry (elementary course).
1 Ju., 3 So., 7 Fr., 3 Sc. Total 14.
- C. Professor BYERLY.—Plane and Solid Analytic Geometry (extended course).
1 Se., 1 Ju., 6 So., 15 Fr., 1 Sp., 2 Sc. Total 26.
- D¹ *hf.* Mr. J. L. COOLIDGE.—Algebra.
2 Se., 6 Ju., 11 So., 21 Fr., 2 Sp., 2 Sc. Total 44.
- E² *hf.* Dr. BOUTON, and Mr. J. L. COOLIDGE.—Solid Geometry.
2 Se., 7 Ju., 14 So., 17 Fr., 3 Sp., 19 Sc. Total 62.
2. Professor BYERLY, assisted by Mr. ASHTON.—Differential and Integral Calculus (first course).
2 Gr., 3 Se., 10 Ju., 23 So., 3 Fr., 3 Sc. Total 44.
4. Asst. Professor OSGOOD.—The Elements of Mechanics.
4 Gr., 2 Se., 5 Ju., 3 So., 2 Sc. Total 16.

For Undergraduates and Graduates:—

- 1¹ *hf.* Mr. WHITTEMORE. — Theory of Equations.
3 Gr., 2 Se., 1 Ju., 1 So., 2 Sc. Total 9.
3. Dr. BOUTON. — Modern Methods in Geometry. Determinants.
2 Gr., 2 Se., 3 Ju., 2 So. Total 9.
5. Mr. WHITTEMORE. — Differential and Integral Calculus (second course).
7 Gr., 2 Se., 7 Ju., 5 So., 1 Sc. Total 22.
- 12¹ *hf.* Asst. Professor OSGOOD. — Infinite Series and Products.
1 Gr., 1 Se. Total 2.
- 14² *hf.* Asst. Professor OSGOOD. — Algebra. Galois's Theory of Equations.
7 Gr., 2 Se. Total 9.

Primarily for Graduates:—

- ‡13. Dr. BOUTON. — The Theory of Functions (introductory course).
3 Gr., 1 Se., 1 R. Total 5.
- ‡7b. Professor J. M. PEIRCE. — The Theory of Tetrahedral Coordinates, with its applications to the study of points, lines, planes, and quadric surfaces.
1 Gr. Total 1.
- ‡28. Mr. J. L. COOLIDGE. — The Geometry of Position. 2 Gr. Total 2.
- ‡22. Mr. WHITTEMORE. — Introduction to the Differential Geometry of Twisted Curves and Surfaces. 6 Gr., 1 Sc., 1 Instr. Total 8.
9. Professor J. M. PEIRCE. — The Calculus of Quaternions (second course), including the study by Quaternions of the Dynamics of Particles and Rigid Bodies. 4 Gr. Total 4.
- ‡10. Professor BYERLY. — Trigonometric Series. Introduction to Spherical Harmonics. The Potential Function. 6 Gr., 2 Se., 1 Sc., 1 R. Total 10.
- ‡15. Dr. BOUTON. — Differential Equations, with an introduction to Lie's Theory of Continuous Groups. 5 Gr., 1 R. Total 6.
- ‡16. Asst. Professor OSGOOD. — The Calculus of Variations. 4 Gr. Total 4.
- ‡23¹ *hf.* Professor J. M. PEIRCE. — Quaternion Imaginaries and other selected topics in Quaternions. 2 Gr. Total 2.
- ‡21² *hf.* Professor J. M. PEIRCE. — Linear Associative Algebra. 2 Gr. Total 2.

COURSES IN READING AND RESEARCH.

- ‡20b. Professor ASAPH HALL (U. S. Navy). — Selected topics in Celestial Mechanics. 2 Gr. Total 2.
- ‡20c. Asst. Professor OSGOOD. — Selected topics in Higher Analysis. 1 Gr. Total 1.
- 20g. Dr. BOUTON. — Selected topics in the Theory of Continuous Groups. 1 Gr. Total 1.

Astronomy.*Primarily for Undergraduates:—*

- 1¹ *hf.* Asst. Professor WILLSON and Mr. J. F. COLE. — Descriptive Astronomy.
11 Se., 23 Ju., 13 So., 1 Fr., 9 Sc. Total 57.

- 2^h hf. Asst. Professor WILLSON and Mr. J. F. COLE. — Practical Astronomy.
Application of Astronomy to Navigation and Exploration.
3 Se., 5 Ju., 6 So., 1 Sp., 2 Sc. Total 17.

For Undergraduates and Graduates: —

3. Asst. Professor WILLSON. — Practical Astronomy. 1 Gr., 1 Ju. Total 2.
4. Professor ASAPH HALL (U. S. Navy). — Spherical Astronomy. Theory of
Eclipses. 2 Gr. Total 2.

Engineering.

The courses in Engineering are intended primarily for students in the Lawrence Scientific School, but many of them are counted towards the degree of A.B. The Catalogue shows what courses may be so counted.

- 1a¹ hf. Messrs. LOVE, ASHTON, FRIZELL, and BROWN. — Advanced Algebra.
1 Se., 1 Ju., 3 So., 6 Fr., 3 Sp., 133 Sc. Total 147.
1b¹ and ² hf. Messrs. LOVE, ASHTON, FRIZELL, and BROWN. — Trigonometry.
2 So., 1 Fr., 122 Sc., 3 Bu. Total 128.
1d³ hf. Messrs. LOVE, ASHTON, FRIZELL, and BROWN. — Analytic Geometry.
3 Se., 2 Ju., 7 So., 5 Fr., 105 Sc. Total 122.
1c. Messrs. LOVE and ASHTON. — Differential and Integral Calculus.
1 Se., 4 Ju., 4 So., 65 Sc. Total 74.
1f¹ hf. Mr. LOVE. — Integral Calculus and Differential Equations.
7 Sc. Total 7.
3a. Messrs. KENNEDY, MOYER, and JONES. — Mechanical Drawing.
2 Gr., 3 Se., 6 Ju., 14 So., 20 Fr., 116 Sc. Total 161.
3b¹ hf. Mr. MOSES. — Descriptive Geometry.
2 Se., 3 Ju., 2 So., 59 Sc. Total 66.
3d³ hf. Mr. MOSES. — Mechanism. Study of Gearing and Mechanical Move-
ments. 1 Se., 3 Ju., 2 So., 50 Sc. Total 56.
3e² hf. Mr. MOSES. — Stereotomy, Shades, Shadows, and Perspective.
1 Gr., 9 Sc. Total 10.
4a. Mr. TURNER. — Plane Surveying. (See page 81.)
4c. Mr. TURNER. — Geodetic Surveying. (See page 81.)
4d. Mr. TURNER. — Railroad Surveying. (See page 81.)
10a. Asst. Professor W. S. BURKE. — Chipping, filing and fitting. (See page 81.)
10b. Asst. Professor W. S. BURKE. — Blacksmithing. (See page 81.)
10c. Asst. Professor BURKE. — Pattern-making and Foundry Practice.
(See also page 81.) 1 Gr., 13 Sc. Total 14.
10e. Asst. Professor BURKE. — Machine Shop Practice.
(See also page 81.) 1 Gr., 11 Sc. Total 12.
For Undergraduates and Graduates: —
5b¹ hf. Asst. Professor JOHNSON and Mr. MOYER. — Elementary Statics.
Graphic and Algebraic Methods.
5 Se., 7 Ju., 3 So., 1 Fr., 76 Sc. Total 92.

- 5d² hf. Asst. Professor JOHNSON and Mr. MOYER. — Resistance of Materials (introductory course). Elementary Structural Design.
2 Gr., 4 Se., 7 Ju., 2 So., 60 Sc. Total 75.
- 5a. Professor HOLLIS and Mr. HUGHES. — Applied Mechanics, including Elementary Kinetics.
1 Gr., 1 Se., 2 Ju., 1 So., 43 Sc. Total 48.
- 5c¹ hf. Professor HOLLIS. — Resistance of Materials (second course).
1 Se., 31 Sc. Total 32.
- 6a² hf. Mr. KENNEDY. — Hydraulics and Hydraulic Motors.
3 Se., 1 So., 31 Sc. Total 35.
- 6c¹ hf. Mr. FLINN. — Water Supply and Sanitary Engineering.
18 Sc. Total 18.
- 6d² hf. Asst. Professor JOHNSON and Mr. MEAD. — Canals, Rivers, and Irrigation.
17 Sc. Total 17.
- 7a. Asst. Professor JOHNSON. — Bridges and Buildings. Graphical Statics. Details of iron and steel construction.
1 Gr., 15 Sc. Total 16.
- 8a² hf. Asst. Professor JOHNSON. — Masonry and Foundations.
2 Se., 18 Sc., 1 Bu. Total 21.
- 11a² hf. Asst. Professor MARKS. — Machinery and Boilers.
1 Gr., 3 Se., 8 Ju., 1 So., 1 Sp., 78 Sc. Total 92.
- 12b¹ hf. Asst. Professor MARKS. — Elements of Thermodynamics. Theory of Heat Engines.
2 Se., 1 So., 28 Sc. Total 31.
- 12a¹ hf. Asst. Professor MARKS. — Efficiency and Economics of Engines and Boilers.
10 Sc. Total 10.
- 12c² hf. Asst. Professor BURKE. — Heating and Ventilation. 13 Sc. Total 13.
- 13a. Asst. Professor MARKS and Mr. HUGHES. — Engineering Laboratory. Introductory course in experimental methods.
3 Se., 2 Ju., 1 So., 36 Sc. Total 42.
- 13b. Asst. Professor MARKS. — Engineering Laboratory (second course).
8 Sc. Total 8.
- 14a¹ hf. Mr. MOSES. — Machine Design (introductory course).
3 Se., 30 Sc. Total 33.
- 14b. Professor HOLLIS and Mr. KENNEDY. — Machine Design (second course).
8 Sc. Total 8.
- 15a. Professor HOLLIS. — Marine Engines and Boilers.
3 Gr., 1 Se., 1 Sc. Total 5.
- 16a¹ hf. Asst. Professor ADAMS and Mr. WHITING. — Industrial Applications of Electricity, with special reference to Dynamo-Electric Machinery.
4 Gr., 2 Se., 1 Ju., 1 So., 62 Sc. Total 70.
- 17a² hf. Asst. Professor ADAMS and Mr. WHITING. — The Electrical Transmission and Distribution of Power.
3 Gr., 4 Se., 1 Ju., 1 So., 51 Sc. Total 60.
- 16c. Asst. Professor ADAMS and Mr. WHITING. — Alternating Currents and Alternating Current Machinery.
2 Gr., 1 Se., 7 Sc. Total 10.

- 16d. Asst. Professor ADAMS. — Dynamo Design. 7 Sc. Total 7.
 16f. Mr. WHITING. — Electrical Engineering Laboratory. 8 Sc. Total 8.
 18a² hf. Asst. Professor BURKE. — Metallurgy. 1 Se., 2 So., 26 Sc. Total 29.
 21. Professor HOLLIS. — Conference on Engineering Subjects. 30 Sc. Total 30.
 22² hf. Asst. Professor WESTENGARD. — Contracts and Specifications. The Principles of Common Law as applied to Contracts. 1 Gr., 1 Se., 42 Sc. Total 44.

Physics.

Primarily for Undergraduates : —

- B hf. Professor E. H. HALL and Mr. ANDEREGG. — Experimental Physics (elementary course). 2 Ju., 31 So., 42 Fr., 10 Sp., 65 Sc. Total 150.
 C. Asst. Professor SABINE and Dr. McELFRESH. — Experimental Physics. Mechanics, Sound, Light, Magnetism, and Electricity. 3 Gr., 7 Se., 15 Ju., 17 So., 16 Fr., 6 Sp., 63 Sc. Total 127.
 1. Professor E. H. HALL and Mr. McKAY. — General Descriptive Physics. 6 Gr., 6 Ju., 10 So., 16 Fr., 1 Sp., 41 Sc. Total 80.

For Undergraduates and Graduates : —

- 2¹ hf. Asst. Professor SABINE. — The Theory of the Microscope, its accessories, and other optical apparatus used in the study of organisms. 2 Gr., 1 Se., 1 Ju., 2 Sc. Total 6.
 3. Mr. AYRES. — Electrostatics, Electrokinematics, and parts of Electromagnetism. 4 Gr., 2 Se., 1 Ju., 2 So., 10 Sc. Total 19.
 4. Professor TROWBRIDGE, Asst. Professor SABINE, and Dr. T. LYMAN. — Electrodynamics, Magnetism, and Electromagnetism. 2 Gr., 1 Ju., 1 So., 8 Sc. Total 12.
 5. Asst. Professor SABINE. — Lectures and laboratory work in Thermometry and Physical Optics. 4 Gr. Total 4.
 6¹ hf. Professor E. H. HALL. — Elements of Thermodynamics. 4 Gr. Total 4.
 6² hf. Professor E. H. HALL. — Modern Developments of Thermodynamics. 4 Gr., 1 Se. Total 5.

Primarily for Graduates : —

- 7 hf. Professor E. H. HALL. — The Theory of Probability and the Kinetic Theory of Gases. 4 Gr., 1 Se. Total 5.
 8. Professor TROWBRIDGE. — Electrodynamics, with special reference to Periodic Currents. 2 Gr. Total 2.

COURSES OF RESEARCH.

- 20a. Professor TROWBRIDGE. — Light and Electricity. 3 Gr., 1 Se. Total 4.
 20b. Asst. Professor SABINE. — Electricity and Magnetism. 2 Instr. Total 2.
 20c. Professor E. H. HALL. — Heat and Electricity. 1 Gr. Total 1.

Chemistry.*Primarily for Undergraduates:—***B. Dr. TORREY and Messrs. BLACK and McADAM.—Experimental Chemistry.**

1 Gr., 2 Se., 8 Ju., 10 So., 29 Fr., 5 Sp., 6 Sc. Total 61.

1. Professor C. L. JACKSON, Mr. CALHANE, and Messrs. ARCHIBALD, DAVIS, FISKE, MARK, and ROOT.—Descriptive Inorganic Chemistry.

2 Gr., 9 Se., 24 Ju., 62 So., 59 Fr., 13 Sp., 133 Sc. Total 302

2¹ hf. Dr. TORREY.—Organic Chemistry (elementary course).

1 Gr., 18 Se., 17 Ju., 13 So., 2 Fr., 8 Sc. Total 59.

3. Asst. Professor SANGER, Mr. MCCARTHY, and Messrs. BONNET, DUNLAP, FISKE, FORBES, MOORE, and STONE.—Qualitative Analysis.

1 Gr., 21 Se., 34 Ju., 26 So., 3 Fr., 1 Sp., 39 Sc. Total 125.

4. Asst. Professor SANGER and Mr. COFFIN.—Quantitative Analysis, gravimetric and volumetric.

1 Gr., 10 Se., 14 Ju., 4 So., 1 Sp., 8 Sc. Total 38.

*For Undergraduates and Graduates:—***8² hf. Asst. Professor RICHARDS.—History of Chemistry and Chemical Theory.**

1 Gr., 10 Se., 13 Ju., 5 So., 2 Fr., 1 Sp., 8 Sc. Total 40.

9¹ hf. Asst. Professor RICHARDS and Mr. BISBEE.—Advanced Quantitative Analysis.

7 Gr., 3 Se., 2 Ju., 4 Sc. Total 16.

10² hf. Asst. Professor RICHARDS and Mr. BISBEE.—Gas Analysis.

4 Gr., 4 Se., 2 Ju., 5 Sc. Total 15.

5. Professor H. B. HILL and Mr. HALE.—The Carbon Compounds.

6 Gr., 10 Se., 6 Ju., 2 So., 1 Sp., 9 Sc. Total 34.

*Primarily for Graduates:—***6. Asst. Professor RICHARDS and Mr. HEIMROD.—Physical Chemistry.**

7 Gr., 4 Se., 1 Ju., 4 Sc. Total 16.

7² hf. Mr. HEIMROD.—Electrochemistry.

6 Gr., 2 Se., 1 Sc. Total 9.

COURSES OF RESEARCH.**20a. Asst. Professor RICHARDS.—Inorganic Chemistry, including Determination of Atomic Weights.**

2 Gr., 1 Se. Total 3.

20b. Professor C. L. JACKSON.—Organic Chemistry.

4 Gr., 1 Se. Total 5.

20c. Professor H. B. HILL.—Organic Chemistry.

2 Gr. Total 2.

20d. Asst. Professor RICHARDS.—Physical Chemistry.

2 Gr., 1 Se. Total 3.

20e. Asst. Professor SANGER.—Applied Chemistry.

1 Gr., 2 Se., 1 Sc. Total 4.

Botany.*Primarily for Undergraduates:—***1² hf. Dr. TRUE and Mr. OLIVE.—Botany (introductory course).**

4 Se., 21 Ju., 32 So., 30 Fr., 7 Sp., 32 Sc., 1 Bu. Total 127.

2¹ hf. Asst. Professor THAXTER and two assistants.—Morphology of Plants.

7 Gr., 6 Se., 11 Ju., 6 So., 2 Sp., 9 Sc. Total 41.

For Undergraduates and Graduates :—

8. Dr. TRUE and Messrs. OLIVE and AMES.—Botany (second course). Morphology, histology (with special reference to the technique of the microscope), and physiology of flowering plants. 5 Gr., 11 Sc. Total 16.

- 4¹ hf. Asst. Professor THAXTER and one assistant.—Cryptogamic Botany. 3 Gr., 3 Ju., 3 Sc. Total 9.

Primarily for Graduates :—

COURSES OF RESEARCH.

- 20a. Dr. TRUE.—Structure and Development of Phanerogams. Experimental Vegetable Physiology. Economic Botany, with special reference to *Materia Medica*. 4 Gr., 1 Se. Total 5.
- 20b. Asst. Professor THAXTER.—Structure and Development of Cryptogams. 6 Gr. Total 6.

Zoölogy.

Primarily for Undergraduates :—

- 1¹ hf. Asst. Professor G. H. PARKER, Mr. BREED, and other assistants.—Zoölogy (introductory course). 1 Gr., 10 Se., 20 Ju., 31 So., 25 Fr., 9 Sp., 28 Sc. Total 124.
- 2² hf. Dr. CASTLE, Mr. CRAWLEY, and a second assistant.—Morphology of Animals. 3 Gr., 5 Se., 11 Ju., 10 So., 3 Fr., 3 Sp., 9 Sc. Total 44.

For Undergraduates and Graduates :—

8. Dr. H. W. RAND and Mr. ORDWAY.—Comparative Anatomy of Vertebrates. 4 Gr., 3 Se., 3 Ju., 3 So., 5 Sc. Total 18.
- 4¹ hf. Professor MARK and Dr. H. W. RAND.—Microscopical Anatomy. 2 Gr., 3 Se., 1 So., 2 Sc. Total 8.
- 5² hf. Professor MARK and Dr. H. W. RAND.—Embryology of Vertebrates. 3 Gr., 3 Se., 1 So., 3 Sc. Total 10.
- 9¹ hf. Asst. Professor R. T. JACKSON.—Fossil Invertebrates. 2 Gr., 1 Sc. Total 3.
10. Dr. CASTLE.—Experimental Morphology. Ontogenesis. 3 Gr. Total 3.
- 13¹ hf. Asst. Professor G. H. PARKER.—Introduction to the study of the Nervous System. 2 Gr., 1 Se., 3 Sc. Total 6.
- 16² hf. Asst. Professor G. H. PARKER.—The Nervous System and its Terminal Organs. Central Nervous Organs and Terminal Organs of Efferent Nerves. 3 Gr., 1 Se., 4 Sc. Total 8.

Primarily for Graduates :—

COURSE OF RESEARCH.

- 20a. Professor MARK.—Anatomy and Development of Vertebrates and Invertebrates. 8 Gr., 1 Se., 1 Sc. Total 10.

Geology and Geography.

Primarily for Undergraduates :—

A¹ hf. Dr. DALY. — Physiography of the Lands.

2 Gr., 3 Se., 9 Ju., 10 So., 6 Fr., 4 Sp., 37 Sc., 4 Bu. Total 75.

B² hf. Asst. Professor WARD. — Meteorology (elementary course).

1 Gr., 2 Se., 9 Ju., 19 So., 20 Fr., 3 Sp., 45 Sc., 6 Bu. Total 105.

4 hf. Professor SHALER and Mr. WOODMAN. — Elementary Geology.

3 Gr., 19 Se., 47 Ju., 116 So., 138 Fr., 15 Sp., 85 Sc., 1 Law,
2 Me., 6 Bu. Total 432.

5² hf. Mr. J. B. WOODWORTH, assisted by Messrs. WOODMAN and BOYNTON. — Elementary Field and Laboratory Geology.

4 Gr., 8 Se., 11 Ju., 40 So., 29 Fr., 4 Sp., 63 Sc., 4 Bu. Total 163.

1¹ hf. Asst. Professor WARD. — Meteorology (second course).

4 Se., 2 So., 6 Sc. Total 12.

For Undergraduates and Graduates :—

6² hf. Professor DAVIS. — Physiography of the United States.

8 Gr., 5 Se., 2 Ju., 9 Sc. Total 24.

8. Mr. J. B. WOODWORTH, assisted by Mr. J. E. WOODMAN. — General Critical Geology.

2 Gr., 3 Se., 4 Ju., 2 So., 8 Sc. Total 19.

10. Professor SMYTH. — Mining Geology.

2 Gr., 8 Se., 2 Ju., 3 So., 15 Sc. Total 29.

22. Dr. JAGGAR. — Advanced Geological Field Work. Areal Geology in the vicinity of Boston.

4 Gr., 3 Se., 3 Sc. Total 10.

11² hf. Dr. DALY. — Oceanography. 1 Gr., 7 Se., 3 Ju., 5 So., 4 Sc. Total 20.

17² hf. Dr. JAGGAR. — Experimental and Dynamical Geology.

3 Gr., 1 Ju., 1 Sp., 2 Sc. Total 7.

16¹ hf. Mr. J. B. WOODWORTH, assisted by Mr. BOYNTON. — Glacial Geology.

8 Se., 1 Ju., 6 Sc. Total 15.

27¹ hf. Professor SMYTH. — Pre-Cambrian Geology of North America, with especial reference to the stratigraphy and economics of the rocks in the original Laurentian area and the region of the Great Lakes.

1 Gr., 3 Se., 1 Sc. Total 5.

19¹ hf. Asst. Professor WARD. — General Climatology. 2 Gr., 4 Se. Total 6.

25² hf. Asst. Professor WARD. — Special Climatology. 1 Gr., 1 Sp. Total 2.

14 hf. Professor SHALER and Asst. Professor R. T. JACKSON, assisted by Mr. STONE. — General Palaeontology.

1 Gr., 15 Se., 17 Ju., 9 So., 1 Fr., 17 Sc. Total 60.

14a hf. Asst. Professor R. T. JACKSON, assisted by Mr. STONE. — General Palaeontology.

3 Se., 1 So., 1 Fr., 7 Sc. Total 12.

15. Professor SHALER and Asst. Professor R. T. JACKSON. — Historical Geology.

1 Gr., 1 Se. Total 2.

18¹ hf. Professors SHALER and SMYTH. — Economic Geology. Non-metalliferous products and water supply.

3 Gr., 6 Se., 9 Sc. Total 18.

Primarily for Graduates : —

COURSES OF RESEARCH.

- 20 Professor DAVIS. — Physiography (advanced course). 4 Gr. Total 4
23. Professors SHALER, DAVIS, and SMYTH, Mr. J. B. WOODWORTH, and Dr. JAGGAR. — Geological Investigation in the Field and Laboratory. 2 Gr., 1 Sc. Total 3.
24. Professor SHALER and Asst. Professor R. T. JACKSON. — Advanced Palaeontology. 1 Gr. Total 1.

Mineralogy and Petrography.*Primarily for Undergraduates : —*

2. Professor WOLFF, Drs. PALACHE and LORD. — Mineralogy. 3 Gr., 6 Se., 9 Ju., 7 So., 22 Sc. Total 47.
- 3 *hf.* Professor WOLFF. — Building Stones (course for students of Architecture). 1 Gr., 1 So., 30 Sc. Total 32.

For Undergraduates and Graduates : —

- 7¹ *hf.* Dr. PALACHE. — Crystallography. 2 Se., 1 Ju. Total 3.
- 8² *hf.* Professor WOLFF and Dr. PALACHE. — Physical Crystallography (mainly Optical Mineralogy and its applications). 2 Gr., 2 Se., 2 Ju. Total 6.
12. Professor WOLFF and Dr. LORD. — Petrography. 5 Se., 2 Ju., 4 Sc. Total 11.

Primarily for Graduates : —

COURSE OF RESEARCH.

20. Professor WOLFF and Dr. PALACHE. — Mineralogical and Petrographical Research. 2 Gr. Total 2.

Mining and Metallurgy.*For Undergraduates and Graduates : —*

- 1² *hf.* Professor SMYTH. — Mining. Prospecting and exploring; sampling, and the principles of exploitation. 2 Gr., 6 Se., 2 Ju., 2 So., 15 Sc. Total 27.
- 2¹ *hf.* Mr. SAUVEUR. — Metallurgy of iron and steel. 1 Gr., 9 Se., 1 Ju., 1 So., 15 Sc. Total 27.
- 3² *hf.* Mr. RAYMER. — Metallurgy of copper, nickel, lead, zinc, and the minor metals. 2 Gr., 4 Se., 3 Ju., 1 So., 11 Sc. Total 21.
4. Mr. RAYMER. — Ore-dressing, Concentration, and Milling. 3 Gr., 1 Se., 9 Sc. Total 13.
- 5¹ *hf.* Professor SMYTH. — Mining. Metal and coal mining; exploitation. 3 Gr., 2 Se., 7 Sc. Total 12.
- 11² *hf.* Mr. RAYMER. — Mining Plant. 2 Gr., 2 Se., 6 Sc. Total 10.
- 6¹ and 2 *hf.* Mr. WHITE. — Metallurgical Chemistry. 3 Se., 10 Sc. Total 13.
7. Mr. WHITE. — Metallurgical Chemistry (advanced course). 2 Gr., 1 Se., 1 Sc. Total 4.
- 10¹ *hf.* Mr. RAYMER. — Fire Assaying. 2 Gr., 2 Se., 1 Ju., 8 Sc. Total 13.

Primarily for Graduates : —

COURSE OF RESEARCH.

20. Mr. SAUVEUR. — Metallurgy and the Physics of Metals. 2 Sc. Total 2.

American Archaeology and Ethnology.*For Undergraduates and Graduates:—*

1. Dr. RUSSELL.—General Anthropology. Somatology. Prehistoric Archaeology of Europe and America. Ethnology.
2 Gr., 6 Se., 5 Ju., 5 So., 1 Fr., 1 Sc. Total 20.

Primarily for Graduates:—

- 3^h hf. Dr. J. H. WOODS.—Primitive Religions. Theories of origin, animism, totemism, fetishism, ceremonial, symbolism, comparative mythology, and folklore.
2 Se., 2 Ju., 2 Sc., 1 R. Total 7.
- 4^h hf. Dr. RUSSELL.—Prehistoric Archaeology; European Ethnology.
2 Gr., 6 Se., 1 Sc., 1 Me. Total 10.
- 5^h hf. Dr. RUSSELL.—American Archaeology and Ethnology. 3 Gr. Total 3.

COURSES OF SPECIAL STUDY.

- 20a. Professor PUTNAM.—American Archaeology and Ethnology.
3 Gr. Total 3.
- 20b. Dr. RUSSELL.—Advanced Somatology. 1 Gr., 1 Se. Total 2.

Anatomy, Physiology, and Hygiene.

1. Dr. DARLING, Dr. PROVANDIE, and Dr. BACON.—Elementary Anatomy and Physiology. Personal Hygiene. Emergencies.
1 Gr., 16 Se., 29 Ju., 31 So., 5 Fr., 2 Sp., 15 Sc., 1 Law. Total 100.
- 4^h hf. Dr. D. A. SARGENT.—Anthropometry. 1 Gr., 11 Sc. Total 12.
- 5^h hf. Dr. D. A. SARGENT.—Applied Anatomy and Animal Mechanics.
1 Gr., 8 Sc. Total 9.


Instruction by Doctors of Philosophy.

The following course was given in accordance with a vote of the President and Fellows, empowering the Faculty to authorize any Doctor of Philosophy or of Science who has been approved by the Department with which his work is most closely related, to give instruction for a period not exceeding four months, either gratuitously or for such fees as he may himself fix and collect:—

Dr. H. H. BROWN.—Electrical Conduction in Gases.

Summer Courses of Instruction, 1901.

The following is a list of the courses of instruction given during the summer of 1901 under the direction of the Faculty, with an enumeration and classification of the students taking each course. The same abbreviations are used as in the foregoing table, with the addition of the abbreviations S.S. for members of the Harvard

Summer School, and Cu. for member of the Summer School for Cubans, who were otherwise unconnected with the University. The index  denotes courses which may be offered to count towards a degree.

Greek.

- I. Dr. G. H. CHASE. — Greek for Beginners. 5 times a week, for 6 weeks.
1 Sp., 4 R., 7 S.S. Total 12.

Latin.

- I. Dr. H. W. PRESCOTT. — Latin for Teachers in the Secondary Schools.
5 times a week, for 6 weeks. 30 S. S. Total 30.

English.

- A. Asst. Professor HURLBUT, assisted by Messrs. F. W. C. HERSEY and F. W. REYNOLDS. — English Composition (elementary course). 5 times a week, for 6 weeks. 75 S. S. Total 75.
- B. Dr. MAYNADIER, assisted by Mr. F. W. C. HERSEY. — English Composition (advanced course). 5 times a week, for 6 weeks. 36 S. S. Total 36.
- C. Mr. P. LA ROSE. — English Composition (second advanced course). 5 times a week, for 6 weeks. 6 S. S. Total 6.
- Dr. SCHOFIELD. — Anglo-Saxon. Anglo-Saxon Reader and Grammar. 5 times a week, for 6 weeks. 1 Sp., 6 S. S. Total 7.
- Dr. W. A. NEILSON. — Shakspere. 5 times a week, for 6 weeks.
13 S. S. Total 13.
- Mr. HURLBUT, assisted by Mr. F. W. REYNOLDS. — English Literature of the Eighteenth Century. 5 times a week, for 6 weeks. 20 S. S. Total 20.
- Dr. W. A. NEILSON. — English Literature in Outline, from Anglo-Saxon Times to the Present. 5 times a week, for 6 weeks. 23 S. S., 5 Cu. Total 28.
- Mr. I. L. WINTER. — Public Speaking and Reading. Course for teachers of reading and public speaking, and for teachers of English. 5 times a week, for 6 weeks. 13 S. S., 1 Gr. Total 14.

German.

- I. Dr. J. F. COAR. — Composition and Conversation. 5 times a week, for 6 weeks. 13 S. S. Total 13.
- II. Mr. W. G. HOWARD. — German Literature of the Classic Period. 5 times a week, for 6 weeks. 2 S. S. Total 2.

French.

- I. Mr. C. H. C. WRIGHT. — Introductory Course. Grammar, reading, and translation. 5 times a week, for 6 weeks. 5 S. S., 1 L. Total 6.
- II Asst. Professor MARCOU. — Advanced Course. Literature, reading, and composition. 5 times a week, for 6 weeks. 5 S. S. Total 5.

Spanish.

- I. Dr. FORD. — Introductory Course. Grammar, composition, and translation. 5 times a week, for 6 weeks. 8 S. S., 1 R. Total 9.

History and Government.

- I. Dr. BOTSFORD. — Greek History. Lectures (5 times a week, for 5 weeks); research, conferences, and written work (1 week). 13 S. S. Total 13.
- II. Dr. A. L. CROSS. — English History. 28 lectures, supplemented by written exercises. 11 S. S. Total 11.
- III. Professor HART and Dr. A. L. CROSS. — American History. Lectures and training in the use of materials, and in the application of the laboratory method of study. 25 lectures, supplemented by 4 pieces of written work. 26 S. S. Total 26.
- IV. Professor LOWELL and Mr. J. P. WARREN. — Civil Government. Lectures, reading, and reports. 5 times a week, for 6 weeks. 11 S. S. Total 11.

Psychology.

- I. Dr. MACDOUGALL. — The Psychology of the senses and the development of voluntary motor ability. 5 times a week, for 6 weeks. 18 S. S. Total 18.
- II. Dr. MACDOUGALL. — Experimental investigations in the field of sensory and motor activity. 5 times a week, for 6 weeks. 13 S. S. Total 13.

Education.

- I. Asst. Professor HANUS. — General Principles of Education. Courses of study; organization and administration of schools and school systems. 25 lectures, supplemented by written work and thesis. 39 S. S., 1 Cu. Total 40.
- II. Mr. A. O. NORTON. — History of Educational Aims and Principles from antiquity to the present time. 25 lectures, supplemented by reading and reports. 11 S. S. Total 11.

Theory of Design.


- Dr. D. W. ROSS and assistants. — Lectures, with experimental practice, for designers, for teachers of Design, and for teachers of the History of Art. 70 S. S. Total 70.

Music.

- I. Mr. W. R. SPALDING. — Grammar and Principles. 5 times a week, for 6 weeks. 7 S. S. Total 7.
- II. Mr. W. R. SPALDING. — General Course. 5 times a week, for 6 weeks. 6 S. S. Total 6.

Mathematics.

- SD. Dr. H. H. BROWN. — Advanced Algebra. 5 times a week, for 6 weeks. 3 Ju., 5 S. S. Total 8.
- SE. Mr. ASHTON. — Solid Geometry. 5 times a week, for 6 weeks. 1 So., 2 Ju., 1 Sc., 6 S. S. Total 10.
- SA. Dr. H. H. BROWN. — Plane Trigonometry. 5 times a week, for 6 weeks. 4 Ju., 1 So., 1 Fr., 1 Sp., 5 S. S. Total 12.

 SB. Asst. Professor LOVE. — Plane Analytic Geometry. 5 times a week, for 6 weeks. 8 Sc., 8 S. S. Total 16.

S2. Mr. ASHTON. — Differential and Integral Calculus. 5 times a week, for 6 weeks. 1 Ju., 4 Sc., 2 S. S. Total 7.

Astronomy.

Asst. Professor WILLSON. — Lectures, laboratory work, and observations. 5 times a week, for 6 weeks. 2 S. S., 1 Gr. Total 2.

Physics.

Asst. Professor SABINE, assisted by Mr. W. E. McELFRESH and Professor W. D. COLLINS (Earlham College). — Elementary Physics. 5 times a week, for 6 weeks. 18 S. S. Total 18.

Asst. Professor SABINE and assistants. — Advanced Physics. 5 times a week, for 6 weeks. 1 Ju., 1 Sp., 1 Bu., 15 S. S. Total 18.


Chemistry.


Dr. TORREY, assisted by Messrs. HALE, BLACK and CALHANE. — Elementary Theoretical and Descriptive Chemistry. 5 times a week, for 6 weeks. 9 S. S. Total 9.

Dr. TORREY and assistants. — Advanced course in General Chemistry. 5 times a week, for 6 weeks. 3 S. S. Total 3.


Dr. TORREY and assistants. — Elementary Organic Chemistry. 5 times a week, for 6 weeks. 4 S. S. Total 4.

Botany.

 S1. Mr. OLIVE, Mr. KING, and Mr. DANDENS. — Lectures, laboratory work, and field work. 5 times a week, for 6 weeks. 2 Ju., 2 So., 2 Fr., 1 Sc., 11 S. S. Total 18.

 S2. Mr. OLIVE and assistants. — Advanced Course in Morphology, etc. 5 times a week, for 6 weeks. 1 Fr., 18 S. S. Total 9.

Geology.

 S1. Professor SHALE and Mr. WOODMAN. — Elementary course. Lectures, laboratory, and field work. 5 times a week, for 6 weeks. 1 So., 1 Fr., 3 Sc., 7 S. S. Total 12.

Geography.

Mr. H. T. BURR, assisted by Mr. C. H. MORRILL. — Lectures, laboratory, and field work. 5 times a week, for 6 weeks. 1 Sc., 20 S. S. Total 21.

Physical Training.

Dr. D. A. SARGENT and assistants. — Elementary and advanced courses in theory and practice. 5 weeks. 1 Sp., 112 S. S., 36 Cu. Total 149.

Historical Excursions.

Mr. W. E. DORMAN, assisted by Mr. G. NEWHALL. — Historical Excursions. 3 lectures and 7 excursions.

The following courses were given in the summer as part of the regular instruction of the Lawrence Scientific School :—

Engineering.

- 4a. Mr. TURNER. — Plane Surveying. Field work. Daily, 4 weeks.
1 Gr., 3 Se., 6 Ju., 8 So., 12 Fr., 32 Sc., 1 Bu., 2 S. S. Total 65.
- 4c. Mr. TURNER. — Geodetic Surveying. Daily, 2 weeks.
1 Gr., 2 Se., 8 Ju., 7 So., 12 Fr., 46 Sc., 1 S. S. Total 77.
- 4d. Mr. TURNER. — Railroad Surveying. Daily, 3 weeks.
1 Gr., 3 Se., 8 Ju., 8 So., 12 Fr., 46 Sc., 1 S. S. Total 79.
- 10a. Asst. Professor W. S. BURKE. — Chipping, filing, and fitting. Ninety hours.
2 Ju., 1 Fr., 20 Sc., 3 S. S. Total 26.
- 10b. Asst. Professor W. S. BURKE. — Blacksmithing. Ninety hours.
2 Ju., 1 Fr., 21 Sc., 2 S. S. Total 26.
- 10c. Asst. Professor BURKE. — Pattern Making, etc. Ninety hours.
2 Ju., 1 Fr., 22 Sc., 2 S. S. Total 27.
- 10e. Asst. Professor BURKE. — Machine-Shop Practice. Ninety hours.
2 Ju., 1 Fr., 23 Sc., 3 S. S. Total 29.

Instruction provided for 1901-02.

In the list of courses of instruction provided for 1901-02 there were, as usual, numerous changes of detail, especially changes of instructors or in the plan of instruction in some of the courses given regularly every year, and changes due to alteration and rotation among the more advanced courses. In some departments, namely, Romance Languages, History, and Philosophy, there appears a substantial diminution of the amount of instruction, due to the loss or temporary absence of instructors; while a few other departments, notably English and Engineering, show a substantial gain. In the great majority of the departments, however, the amount of instruction is nearly the same as it was in 1900-01, and the total amount offered by the Faculty is not materially changed. The totals for the last four years are as follows :—

1898-99	327½	courses
1899-1900	338	"
1900-01	356	"
1901-02	354½	"

Among the courses announced for the present year, the following deserve special mention as distinct additions to the list :—

Primarily for Undergraduates :—

Professors SMITH, M. WARREN, and HOWARD, Asst. Professor C. P. PARKER, and Dr. E. K. RAND. — General View of Latin Poetry.

Dr. BIERWIRTH. — Practice in speaking and writing German. *Hf.*

For Undergraduates and Graduates:—

- Asst. Professor ROPES.—Introduction to the Study of the New Testament. *Hf.*
- Professor KITTREDGE.—Studies in the Sources and History of the English Vocabulary. *Hf.*
- Dr. SCHOFIELD.—The Literary History of England from the Norman Conquest to Chaucer. *Hf.*
- Dr. SCHOFIELD.—The Literary History of England from Chaucer to Elizabeth. *Hf.*
- Professor A. S. HILL and Mr. J. G. HART.—History and Development of English Literature in outline from 1700 to 1900. *Hf.*
- Dr. E. K. RAND.—Latin Bucolic Poetry from Virgil to the Renaissance. *Hf.*
- Asst. Professor WIENER.—Introduction to the History of Russian Literature. *Hf.*
- Dr. FAY.—History of Continental Europe in the Seventeenth Century. *Hf.*
- Mr. WYMAN.—Principles of Law in their applications to Industrial Problems.
- Mr. SPALDING.—Vocal Counterpoint, with analysis of choral works of the great composers. *Hf.*
- Dr. BOUTON.—Elementary Theory of Differential Equations. *Hf.*
- Asst. Professor ADAMS.—Direct Current Dynamo-Electric Machinery. *Hf.*

Primarily for Graduates:—

- Asst. Professor GULICK.—The Plays of Euripides.
- Professor M. WARREN.—The Comedies of Terence.
- Dr. E. K. RAND.—Boethius (*Consolatio Philosophiae*). *Hf.*
- Professor H. W. SMYTH.—Greek Grammar (*Syntax*). *Hf.*
- Professor MORGAN.—Isaeus and the Greek Laws of Inheritance. *Hf.*
- Professor VON JAGEMANN.—Topics in the History of the German Language (seminary course).
- Professor CHANNING.—The Sources and Literature of American History. *Hf.*
- Professor MÜNSTERBERG.—The Theory of the Will (seminary course).
- Professor PEABODY.—The Ethics of Jesus Christ (seminary course).
- Dr. MILLER.—Ethical Ideals of the Nineteenth Century (seminary course).
- Mr. J. L. COOLIDGE.—Non-Euclidean Geometry.
- Asst. Professor M. BÔCHER.—Introduction to Partial Differential Equations. *Hf.*
- Professor J. M. PEIRCE.—Selected Topics in Quaternions. *Hf.*
- Professor BYERLY.—Picard, *Traité d'Analyse*, I (course of reading and research).
- Mr. J. L. COOLIDGE.—Selected Topics in Projective Geometry (course of reading and research).
- Asst. Professor MARKS.—Heat Engines (course of research).
- Dr. DIXON.—Ethnology of the Pacific Coast of North America. Linguistics. *Hf.*

THE DEGREE OF BACHELOR OF ARTS.

The most important subject that occupied the attention of the Faculty during the past year was the question of the requirements for the degree of Bachelor of Arts. A communication from the Board of Overseers, received in April, 1900, requesting that there be inserted in the Catalogue a clear statement of the conditions on which the various degrees given in course can be obtained, found the Faculty engaged in an attempt to formulate a statement of our existing requirements, with especial reference to the period of residence, for the degree of Bachelor of Arts. The published statements of the requirements for the other degrees under the charge of the Faculty are believed to be reasonably clear, but those relating to the degree of Bachelor of Arts had become unsatisfactory and inadequate, because they took no cognizance of the growing practice of graduating in three years. On this subject the Faculty had formulated no general rules, but continued to deal with the three-year candidates, who have now become a numerous body, on individual petition. In this way a series of precedents had been established and a policy outlined; but before reducing these to the form of general rules the Faculty deemed it prudent to institute a careful inquiry into the whole subject and ascertain whether it was not feasible to arrive at a better definition of the requirements. The matter was accordingly referred to a Committee which, owing to the press of work incident to the close of the College year, could not begin its investigations until the autumn, and could not conclude them before the publication of the Catalogue for 1900-01. Accordingly no change in the statement of requirements was made in that volume.

The Committee, which consisted of Professors J. M. Peirce, Davis, Briggs, Hall, von Jagemann, Taussig, Morgan, and Hurlbut, with the Dean of the Faculty as Chairman, went into the subject committed to it with great thoroughness, and in April presented an elaborate report. The Committee as constituted was not unanimous on the general question of the expediency of encouraging graduation in three years; but, in accordance with its instructions, it formulated a new definition of requirements for the degree of Bachelor of Arts which it unanimously recommended for adoption 'in case the Faculty deems it expedient at this time to recognize the three years course and to give it a place alongside of the four years course.' The proposed definition failed by a narrow margin to command a

majority of the votes of the Faculty. The matter must, therefore, go over for future consideration. Meanwhile, the Faculty has prepared a statement of its present practice in granting the degree of Bachelor of Arts, which, in compliance with a request of the Board of Overseers, will be published in the Catalogue for 1901-02.

The facts and statistics gathered by the Committee and included in its report to the Faculty are, I think, sufficiently valuable and interesting to warrant me in reproducing them here, as they give a brief history of this vexed question to the present time and an account of the existing situation. The essential portions of them are given in the following paragraphs* : —

“As a result of the introduction into our admission requirements of studies equivalent to courses taught in college, there has grown up a great variety in the amount as well as in the quality of the preparation with which our students enter on their college work, and, in consequence, in the amount of work to be done in college in fulfillment of the requirements for the Bachelor's degree. About half of the students of every Freshman class have entered with deficiencies in their admission records, amounting in some cases to as much as the equivalent of two or more college courses; and these deficiencies are often most naturally made up by taking the corresponding studies in college. Many, on the other hand, have anticipated one or more college studies; and although a student who has anticipated half the work of the Freshman year may register as a Sophomore, by no means all who have this privilege avail themselves of it. The admissions to advanced standing exhibit an equal variety of individual cases.

“Under these diverse conditions the requirement of work to be done in college has become a variable quantity, and the formulation of specific rules to meet all the cases that may arise is no longer practicable, even if it were desirable. The existing requirement of residence and study for the attainment of the Bachelor's degree is stated in terms applicable to a student who has entered the Freshman class with no deficiencies in his admission record, and with no college work to his credit; and with this fundamental rule and a few supplementary regulations it has been found possible to deal with all other cases. . . .

“For a student with a clear admission record and no college work to his credit, the present requirement of residence and study for the degree of Bachelor of Arts is in substance as follows : —

* The statistics accompanying the report are given in the Appendix, pp. 309-312.

"In his Freshman year he must take English A, and other studies amounting to *four** courses;

"In his Sophomore year he must take elective studies amounting to *four* courses, and in addition, if he has passed in English A with Grade D, an elective half-course in English Composition;

"In his Junior and Senior years he must take elective studies amounting to *four* courses each year.

"The present rules, therefore, contemplate a normal residence of four years, in each of which the student is required to take studies equivalent to four courses, together with such work in English as may be prescribed for him. The total requirement of college work amounts to sixteen courses, together with the prescribed English; including the prescribed English, it amounts to seventeen or to seventeen and a half courses, as the case may be.

"In order to be recommended for the degree of Bachelor of Arts the student must have passed in all of the courses which he is required to take, and must, moreover, have attained a grade above D, (1) in at least half of all his college work, and (2) in at least half of the work of his Senior year.

"It appears, then, that in the case of the normal student contemplated in the rules the total amount of work which he is required to take and the total amount required for the degree are identical. In actual practice, while the amount of work the student is required to take during a given period of residence is fixed by a general regulation, the amount required for the degree varies greatly with the individual. It is increased in the cases of those who enter a class, Freshman or other, with deficiencies which can be best made up by work in college; it is often diminished, in the cases of those who have anticipated college studies, by the amount of the studies anticipated. For the latter class of cases the Faculty has provided that the number of courses regularly required in the Senior year, or in the Junior and Senior years, may be reduced, but only 'for the purpose of enabling the student to devote the time thus gained to his remaining studies or to studies in a professional school.' The number of students who have asked for a reduction for the first of the two reasons here stated has never been large. The applications for reduction for the purpose of taking studies in a professional school have come mostly from students intending to enter the Law School, the convenient location of which

* He may take and receive credit in additional studies to the extent of one course in his Freshman year, and of two courses in any subsequent year. He may take studies beyond this limit, but receives no credit in them.

made a combination of undergraduate and professional work practicable. For some years such students were permitted to take, while still registered in the College, enough courses in law to enable them to enter, on graduation, the second-year class of the School. This practice ceased in 1894, when a new rule for admission to the second-year class of the Law School went into effect, requiring that a candidate, besides passing the examinations, must have been a member, for at least one academic year, of another law school. From 1894 until 1900 the desired saving of a year was effected in another way. A considerable number of students asked for leave of absence for their Senior year in order to register as regular first-year students in the Law School; and leave was usually granted if the student's work for the degree of A.B. was so far advanced that the part remaining to be done did not exceed one and a half courses. This practice has now in turn been brought to an end by a recent vote of the Faculty of Law, under which a student is no longer permitted to carry on studies for the degree of A.B. along with the regular studies of the law course; so that this resource for undergraduates not fully occupied in their fourth year with studies required for the degree of A.B. is no longer available. The courses of the Medical School are still open to such students, but the number of those who have undertaken to carry on their medical studies along with their college work has always been very small.

"As a result of the conditions which have been described, and also of the liberty which a student has of taking and receiving credit in studies additional to the amount he is required to take in any year,* it happens, and must inevitably happen under our system, that a considerable number of students in their fourth year are required to take studies amounting to four courses, but do not need to pass in all of these studies in order to complete the number of courses required for the degree. The difficulty which might have been anticipated of enforcing the requirement of four courses under these circumstances has not proved serious. The disposition of our students in general is to take more work than is required of them, and to get credit for all that they take. In the class of 1900, out of a total of 404 students graduating, 204 had received credit in studies exceeding by from one half-course to six courses the requirement for the degree. Towards the end of every year a number of Seniors ask

* Including German A or French A, unless he has passed in both Elementary German and Elementary French for admission. For the sake of clearness this is not specifically mentioned in the present statement, . . . since it does not affect the amount and distribution of the student's work . . .

to be excused from taking the final examinations in courses not needed for the degree, and such exemption may often be granted without violating the spirit of the rule. The number of refractory cases which have had to be settled by the Faculty has been exceedingly small.

“ For the attainment of the degree in less than four years from the time of admission to the Freshman class the only provision as yet made by the Faculty in its published announcements refers to students who have anticipated, at the time of their admission, a part of their college work. Such students are informed that they ‘ may obtain leave from the Faculty to fulfil the requirements for the degree in three years by taking additional elective studies under the rules of the Faculty.’ Applications under this rule ‘ will not ordinarily be acted upon until the close of the student’s first year; and the decision upon them will depend upon the quality of the student’s record both in his examination for admission and in his college work.’ In practice, however, the Faculty has not restricted this privilege to the class of students to whom this notice is addressed. By a rule adopted in 1890 any student who by the middle of his Senior year has completed the required work for the degree, is excused, if he so desires, from further residence. In 1891 the Faculty established a standing ‘ Committee on Graduation in Less than Four Years,’ which was charged with the investigation of all applications under this head until 1896, when the Committee was abolished and its functions were transferred to the Administrative Board of Harvard College. Neither the Committee nor the Board was charged with full power in the premises; the Faculty has kept the direct control of the matter in its own hands by voting on each case reported. In the beginning the Faculty exacted a high standard of scholarship — that of the *magna cum laude* degree — of those whom it permitted to graduate in three years; but this requirement was gradually relaxed, and at present scholarship of the grade demanded for a degree *cum laude* is accepted as sufficient. Applicants who have failed to attain this standard but have satisfied all the requirements for the ordinary degree at the end of their Junior year have not, except in a very few cases, received the degree at that time; but the Faculty has not regarded it as reasonable to hold such a student to a fourth year of residence, so that, as a logical result of the situation, the exaction of the *cum laude* standard is not in fact enforced in his case. He suffers the inconvenience of having to wait a year, but he gets an ordinary degree on three years’ residence and study.

“That the policy thus developed by the Faculty has not yet been formulated in published rules is due to the divergence of views on the question of graduation in three years. In 1890 a measure was adopted, the essential feature of which was the reduction of the amount of college work required for the degree from 18.4 courses, as it was then, to 16 courses; but this measure was opposed by a large and earnest minority of the Faculty and was disapproved by the Board of Overseers. In 1896 the subject was taken up again, and after careful deliberation in committee and long and thorough discussion a more elaborate scheme was adopted; but it passed the Faculty by so narrow a majority that it was carried no farther. Since 1896 the situation has been materially altered by the action of our professional schools in making the Bachelor's degree the regular requirement for admission to candidacy for their own degrees. Up to that year the Divinity School alone had established the rule that candidates for its degree must have received the degree of Bachelor of Arts or have had an equivalent training. In that year a new rule of the Law School went into effect, providing that Bachelors of Arts, Literature, Philosophy, or Science of approved colleges, and ‘persons qualified to enter the Senior Class of Harvard College,’ should be admitted as candidates for a degree without examination, all others being admitted (by examination) as special students. In 1899 the exception in favor of ‘persons qualified to enter the Senior Class of Harvard College’ was withdrawn. In June of the present year a new rule of the Medical School goes into effect, requiring that ‘candidates for admission must present a degree in Arts, Literature, Philosophy, or Science, from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by a special vote of the Faculty in each case.’ The Faculty of Arts and Sciences has more than once discussed propositions looking to the acceptance of a first year of professional study in place of the Senior year of the college course, but these propositions, while favored by many members, have never commanded a majority vote.”

The conclusions of the Committee on the present situation and the measures that should be taken to meet it are expressed in the following words:—

“There exists at present a demand for a three years college course on the part of a large and increasing number of students, of whom a majority—about two-thirds in the last five years—remain in the University for graduate or professional study. It is desirable that the work required of these students should be such that it can be

performed in a wholesome and profitable manner, without imposing too great a strain either on the students themselves or on the standard of the courses which they take. At the same time a large majority of our students, from preference or by force of tradition, still adhere to the four years course. Without attempting to foretell the results that may come from any new plan that may be adopted, it is safe to say that, if the three years course is to have a recognized place in our academic scheme, it must exist for some years to come alongside of the four years course. Such being the case, it is highly desirable that each of the two courses should stand, as far as possible, on its own intrinsic merits, neither favored nor discriminated against by technical regulations. Each, in its own way, may be expected to have attractions for the serious-minded student, according to his temperament or his circumstances,—the three years course as one by which, with greater concentration on his studies, he may advance by a year his entrance on professional or special study or into active life; the four years course as affording time for more extended or better digested intellectual work, as well as for the other opportunities and legitimate interests of college life. It would be unfortunate if the three years course should continue to carry with it the implication of over-hasty work, or if the four years course should come to be regarded as a resort for the indolent."

This statement, in my judgment, sets forth clearly and correctly the policy which should be pursued in dealing with this important matter.

CLEMENT L. SMITH, *Dean.*

NOVEMBER 30, 1901.

THE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,—I have the honor of making my report on the condition of Harvard College during the academic year 1900–01.

The number of students at the beginning of the year was nineteen hundred and ninety-two :—

Seniors	388
Juniors	380
Sophomores	536
Freshmen	537
Total number of Undergraduates	<u>1841</u>
Special Students	<u>151</u>
	1992

Compared with the figures of the preceding year, these figures show a gain of ninety :—

	Gain.	Loss.
Seniors	78	..
Juniors . . . . .	..	12
Sophomores	28	..
Freshmen	39	..
Special Students . . . . .	..	<u>43</u>
	<u>145</u>	<u>55</u>
	55	
Net gain	<u>90</u>	

The noteworthy loss in Special Students, a loss of between twenty and twenty-five per cent., is attributable to increased strictness in the committee charged with their admission.

In the course of the year there were six deaths, of which two were violent and accidental. Two were in the Senior Class, two in the Sophomore, and two in the Freshman. If we count as Seniors members of the Class of 1901 on leave of absence and not registered in the College, there was a seventh death.

Four hundred and fifty-nine students, against four hundred and seven in 1900, received in June the degree of Bachelor of Arts. Of these, ninety were not registered as Seniors. The losses and the gains in the three younger classes between November, 1900, and November, 1901, may be learned from the following tables :—

	November, 1900.	Loss.	Gain.	November, 1901.
Class of 1902 . .	(Juniors) 380	115	80	(Seniors) 345
Class of 1903 . .	(Sophomores) 536	164	40	(Juniors) 412
Class of 1904 . .	(Freshmen) 537	113	108	(Sophomores) 532
		392	228	
Net loss in the three classes between Nov., 1899, and Nov., 1900 . . . 164 (75 more than in 1900)				

	Class of 1902.	Class of 1903.	Class of 1904.	Total for three classes.
LOSSES.				
Left College before the end of the year . .	9	18	16	43
Left College at the end of the year	100	28	18	146
Were "dropped" and left College	1	14	8	23
Entered a lower class	3	49	52	104
Entered a higher class	2	55	19	76
Total loss	115	164	113	392
GAINS.				
From higher classes	4	4	51	59
From lower classes	56	19	0	75
Newly admitted	20	17	57	94
Total gain	80	40	108	228
Net loss	35	124	5	164
Net gain	0	0	0	0

The newly admitted Seniors are only twenty, whereas last year they were forty-six; and the students who left College at the end of their Junior year are one hundred, whereas last year they were eighty-three. Every year more students ask leave of absence after completing in three years the requirements for the degree; and this year, when the new admissions to the three upper classes are only ninety-four (against one hundred and thirty-nine last year), the net loss in these classes is large. If we add to this loss the loss in Special Students, we have a total much too large to be overcome by the new Freshman class: the number of students in Harvard College is twenty or thirty less than it was a year ago.

The next table shows the losses and the gains in the number of Special Students since December, 1900:—

In attendance, December, 1900	151
Left College before the end of the year	30
Left College at the end of the year	32
Entered a College class	29
Total loss	91
Reëntered College as Special Students, 1901	60
Newly admitted	81
Total	141
Net loss	10

The Freshman class shows a gain of thirteen members : —

Admitted by examination in 1901	459
Admitted by examination before 1901	37
From a higher class	52
“ the Special Students	1
“ the Lawrence Scientific School	1
Total	550

The foregoing table shows that what looks like a gain in Freshmen is a loss in Sophomores. Last year, of thirty-seven Freshmen who failed of promotion in 1899–1900, thirty came back as dropped Freshmen; this year, of sixty who failed in 1900–01, fifty-two have come back. My next table shows that the percentage of Freshmen who were dropped at the end of the year 1900–01 is unprecedentedly large : —

Year.	Total number in the class.	Dropped.	Per cent.
1891	367	28	7.6
1892	381	19	4.9
1893	409	29	7.
1894	425	25	5.8
1895	399	24	6.
1896	462	32	6.9
1897	416	37	8.8
1898	471	29	6.
1899	471	46	9.7
1900	498	37	7.6
1901	537	60	11.1

Inquiry into the origin and the record of the sixty Freshmen dropped in the summer of 1901 yields no clear explanation of their failure; it shows, however, that, if public schools contributed to the

Freshman class their usual proportion of between thirty and forty per cent., they succeeded somewhat better than private schools in sending pupils who weathered the Freshman year. Inquiry shows further that, though what may be called "the greater Boston" contributed but two hundred and nineteen to a class of five hundred and thirty-seven, the same region is responsible for thirty-three dropped Freshmen out of sixty. If these facts "throw a dark light" on Boston as an educational centre, it must be remembered that students from private schools in and about Boston have in college peculiar social distractions.

Of the unfortunate sixty, five were admitted "clear," and thirty were heavily conditioned. Unquestionably at the Admission Examinations the benefit of the doubt is given to some candidates who as Freshmen prove unworthy. Eighteen of the sixty were admitted in September, making more than sixteen per cent. of those admitted at that time. Since the September candidates are usually persons so belated that they could not finish their work in June, and sometimes persons who were rejected in June, they are not expected to equal the June candidates in their preparation for the Freshman year. Most of them, also, have worked at high pressure during the hot season, and, through a natural mental and physical reaction, find peculiar difficulty in adapting themselves to new systems of instruction.

The following table brings together some interesting facts about the dropped Freshmen of this year: —

From public schools	17
From private schools, including endowed academies . . .	43
From Boston and its immediate neighborhood	33
From New York City	4
From the West	14
Admitted "clear"	5
Heavily conditioned	30
Admitted in June	42
Admitted in September	18

As a rule, dropped Freshmen are known at the College Office as "Office characters," — that is, as students who have frequently been summoned and warned by reason of their low marks and the complaints of their instructors. Often, too, their general aspect and bearing explain their failure. This year some Freshmen were dropped who had never caused complaint at the Office and whose marks up to the end of the year, though not high, did not prophesy loss of promotion. This year, moreover, the dropped Freshmen, taken as a

body, appear no less serious and competent than the students of average rank. Partly because of belated reports in some studies, fewer students than usual were put on probation last year; and this leniency may have had its bad effect. My own belief, however, connects the increase of dropped Freshmen with the increase of conferences and short tests in our large lecture courses and with the corresponding decrease of weight given to examinations — for which students may be transiently prepared by skilful coaches. Most dropped Freshmen are dropped for want of C's; and it seems harder for a lazy Freshman to get C than it was some years ago. This theory that more Freshmen are dropped because our tests have become more frequent and searching and because our marking has become harder, does not, it is true, explain why students who had escaped censure till the end of the year failed then; nor is the theory capable of proof: yet, so far as I can judge, the average Freshman does as much work as ever; and no other theory accounts for the increase of failures.

Thirty-one persons who took in June some of their Final Examinations for admission did not take the remainder in September. Besides these, six hundred and eighteen candidates (twenty-nine less than in 1899) took Final Examinations. Of the six hundred and eighteen, four hundred and seventy-one already had Preliminary certificates; sixty-one divided the examinations between June and September; fifty-three took all their examinations in June; twenty-three took all in September; and ten, because of the extraordinary and dangerous heat during the June examinations, were allowed, whether they had Preliminary certificates or not, to combine for an admission record whatever they could pass in June with whatever they could pass in September: —

	Admitted.	Admitted "Clear."	Rejected.
June	462	236	34
September	103	10	19
Total	565	246	53

Of the June candidates, more than half who were admitted were admitted "clear"; of the September candidates, less than one tenth.

The six hundred and eighteen candidates chose their plans of admission as follows. (Every candidate who mixed the New Method with the Old is reckoned as a New Method candidate.)

OLD METHOD.

Plan (a): All the Elementary Studies and at least two Advanced Studies; sixteen hours of examination	37
Plan (b): All the Elementary Studies except either German or French, and at least three Advanced Studies; seventeen hours of examination	64
Plan (c): All the Elementary Studies except either Greek or Latin, and at least four Advanced Studies, including Advanced Mathematics; eighteen hours of examination	0
Plan (d): All the Elementary Studies except either German or French and either Greek or Latin, and at least five Advanced Studies, including Advanced Mathematics; nineteen hours of examination	0
	<u>101</u>

NEW METHOD.

With Greek (Elementary)	397
Without Greek	120
Total	<u>517</u>
“ Old Method	<u>101</u>
	618

Of the six hundred and eighteen candidates, four hundred and forty-six offered Ancient History rather than Modern; one hundred and fourteen, Modern rather than Ancient; thirty-nine, both Ancient and Modern; four, Ancient and Advanced European; two, Modern and Advanced European; and thirteen, neither. Four hundred and sixty-two candidates offered Experimental Physics rather than Descriptive; and one hundred and five offered no Physics at all. Of the one hundred and five, ninety-three were candidates under the New Method, of whom thirty offered Chemistry, one Physiography, and one Anatomy. In Advanced Studies, Greek, though far behind Latin, has gained the second place: —

1899.	1900.	1901.
1. Latin.	Latin.	Latin.
2. Latin Composition.	French.	Greek.
3. Greek.	Latin Composition.	French.
4. French.	Greek.	Latin Composition.
5. Greek Composition.	Greek Composition.	German.
6. Solid Geometry.	German.	Greek Composition.
7. German.	Solid Geometry.	Log. and Trig.
8. Log. and Trig.	Log. and Trig.	Solid Geometry.
9. Algebra.	Algebra.	Algebra.
10. Analytic Geometry.	History.	History.
11. Physics.	Analytic Geometry.	Physics.
12.	Physics.	Analytic Geometry.
13.	Astronomy.	Meteorology.
14.	Meteorology.	

The next table gives the details on which the foregoing table is based :—

Number of candidates offering	1899.		1900.		1901.	
	Per cent.		Per cent.		Per cent.	
Advanced Greek	357	61.55	380	60	319	51.62
Advanced Latin	531	91.55	550	85	489	79.13
Greek Composition	298	51.38	284	44	120	19.58
Latin Composition	394	67.92	381	60	173	27.99
Advanced German	121	20.86	157	24.26	123	19.9
Advanced French	343	60	397	61	259	41.91
Advanced History . . . . .	. . .		36	5.56	48	7.77
Logarithms and Trigonometry	118	20	88	13.60	101	16.34
Solid Geometry	143	24.65	93	14.37	82	13.27
Analytic Geometry	17	2.93	10	1.54	6	.97
Advanced Algebra	46	7.93	51	8 —	49	7.93
Advanced Physics	8	1.38	8	1.23	7	1.13
Astronomy . . . . .	. . .		7	1.08	0	.0
Meteorology . . . . .	. . .		4	.61	2	.32

The next two tables show, for each study, the percentage of failure (*A*) in the complete records of the candidates, including the records of their successful Preliminary Examinations, and (*B*) in their records at Final Examinations only :—

(<i>A</i>)	1896.	1897.	1898.	1899.	1900.	1901.
ELEMENTARY STUDIES.						
English	8	10.9	8.7	9.6	10.2	9.42
Greek	9.7	5.4	7.86	10.6	4	3.18
Latin	6.8	4.5	6.75	4.65	6	3.91
German	23.3	24.9	17.07	22.97	17.85	16.67
French	9.8	6.2	3.54	6.65	7.6	7.05
History (Ancient)	4.8	9.09	9.41	5	8.2	10.46
History (Modern)	9.6	17.1	7	10	7.44	16.54
Algebra	17.4	16.04	14.56	16.55	14	14.97
Geometry . . . . .	. . .	. . .	. . .	. . .	24	7.06
Plane Geometry	23.1	15.02	26.29	25.7	26.60	16.38
Physics (Descriptive)	43.1	28.7	27.05	47.37	25.67	22.45
Physics (Experimental)	14.1	16.9	12.65	18.53	18.44	17.07
Chemistry	14.8	16.1	15.29	18.48	12	10.82
Physiography . . . . .	. . .	. . .	. . .	. . .	11	33.33
Anatomy . . . . .	. . .	. . .	. . .	. . .	20	50

ADVANCED STUDIES.	1896.	1897.	1898.	1899.	1900.	1901.
Greek	16.1	7.5	12.5	14.28	18.16	12.96
Latin	24.5	19.1	15.73	20	23.45	21.74
Greek Composition	21.6	22.8	16.06	20	10.56	16.45
Latin Composition	19.2	14.1	15.52	25.63	20.21	22.84
German	28.2	32.2	14.18	26.61	30	31.21
French	23.8	15.5	17.78	18.37	26.47	27.57
History . . . . .	. .	. .	. .	. .	41.66	45.1
Logarithms and Trigonometry . .	42.7	27.1	41.60	26.17	23.86	28.85
Solid Geometry	40.2	33.5	26.76	20.98	22.58	27.78
Analytic Geometry	50	27.7	50	23.53	30	66.67
Algebra	36.6	54.9	43.14	35	41.17	48
Physics	57.1	55.5	16.67	37.5	37.5	71.43
Astronomy . . . . .	. .	. .	. .	. .	100	0
Meteorology . . . . .	. .	. .	. .	. .	50	100

(B) ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	1900.	1901.		1900.	1901.
English	13.83	13.43	Greek	14 —	13.21
Greek	13.5	10.67	Latin	23.75	22.45
Latin	18.75	11.76	Greek Composition . .	17.65	20.66
German	27.3	25.98	Latin Composition . .	29.72	30.64
French	18 —	17.79	German	37	35.77
History (Ancient) . .	20	20.41	French	33.76	39.53
History (Modern) . .	10.76	25.61	History	41.66	47.92
Algebra	33.58	32.62	Log. and Trig. . . .	23.86	29.7
Geometry	24.6	10	Solid Geometry . . .	26.25	31.33
Plane Geometry . . .	37.30	21.2	Analytic Geometry . .	50	66.67
Physics (Descriptive) .	29.23	26.19	Algebra	42.85	48.98
Physics (Experimental)	23 +	19.65	Physics	50	71.43
Chemistry	12.38	11.67	Astronomy	100	0
Physiography	11 +	33.33	Meteorology	50	100
Anatomy, etc.	20	50			

The decreased percentage of failure in Elementary Latin and Plane Geometry and the increased percentage in Modern History are noteworthy. In Advanced History nearly half the candidates failed. Last year seven candidates offered Astronomy; and all failed: this year no one offered Astronomy. This year two offered Meteorology; and both failed.

Six hundred and thirty-one candidates (thirteen more than in 1900) took Preliminary Examinations; of whom five hundred and thirty-one (thirty-seven more than in 1900) received certificates:—

NEW METHOD.

Eight points	59
Nine "	8
Ten "	71
Eleven "	1
Twelve "	98
Thirteen points	6
Fourteen "	129
Fifteen "	5
Sixteen "	70
Seventeen "	8
Eighteen "	43
Nineteen "	2
Twenty "	15
Twenty-one points	3
Twenty-two "	12
Twenty-three "	1
Received certificates	531
Failed	100
Total number of candidates	631

The next table gives the percentages of failure in Preliminary Studies. The decreased percentages in Geometry and Plane Geometry are especially cheering:—

ELEMENTARY.			ADVANCED.		
	1900.	1901.		1900.	1901.
English	26	34.78	Greek	50	38.89
Greek	10.93	5.81	Latin	54.76	47.62
Latin	15.88	23.95	Greek Composition . .	24	15.88
German	34.71	24.34	Latin Composition . .	33.68	38.89
French	14.67	16.07	German	29.17	28.95
History (Ancient) . .	21.67	18.65	French	22.45	36.99
History (Modern) . .	15.62	27.54	History	60	71.43
Algebra	27.41	29.57	Log. and Trig.	36.36	33.33
Geometry	41.46	19.05	Solid Geometry	21	14.29
Plane Geometry . . .	53.48	35.55	Analytic Geom.	Not offered	
Physics (Descriptive) .	27.27	62.5	Algebra	60	52.38
Physics (Experimental)	20	26.61	Physics	100	
Physiography	Not offered		Chemistry	20	13.51
Anatomy, etc.	Not off'd		Astronomy	Not offered	
		0*	Meteorology	Not offered	

* Two candidates only.

printing statistics of "Credits" won at the examinations for admission to College, I give (*A*) the "Credits" won this year at examinations; (*B*) those won this year and some earlier year Final candidates of this year; and (*C*) those won this year Preliminary Examinations:—

ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	June.	Sept.		June.	Sept.
h	29	0	Greek	69	1
.	28	3	Latin	31	0
.	21	1	Greek Composition . .	6	0
n	36	0	Latin Composition . .	10	1
l	13	0	German	18	1
y (Ancient) . . .	19	6	French	5	0
y (Modern) . . .	6	1	History	1	0
a	20	3	Log. and Trig.	7	0
stry	11	1	Solid Geometry	12	0
Geometry	74	7	Analytic Geometry . .	1	0
s (Descriptive) .	5	1	Algebra	10	0
s (Experimental) .	77	5	Physics	0	0
stry	32	2	Astronomy	0	0
graphy	0	0	Meteorology	0	0
ny, etc.	0	0			
	371	30		170	3

ELEMENTARY.		ADVANCED.	
h	36	Greek	70
.	112	Latin	34
.	108	Greek Composition	7
n	64	Latin Composition	12
l	53	German	26
y (Ancient)	60	French	14
y (Modern)	10	History	1
a	74	Log. and Trig.	8
stry	13	Solid Geometry	14
Geometry	87	Analytic Geometry	1
s (Descriptive)	8	Algebra	10
s (Experimental) . . .	100	Physics	0
stry	38	Astronomy	0
graphy	0	Meteorology	0
ny, etc.	0		
	763		197

(C) ELEMENTARY.		ADVANCED.	
English	2	Greek	2
Greek	143	Latin	3
Latin	48	Greek Composition	0
German	57	Latin Composition	1
French	48	German	13
History (Ancient)	30	French	9
History (Modern)	3	History	0
Algebra	70	Log. and Trig.	0
Geometry	4	Solid Geometry	0
Plane Geometry	45	Analytic Geometry	0
Physics (Descriptive)	1	Algebra	5
Physics (Experimental)	20	Physics	0
Chemistry	1	Astronomy	0
Physiography	0	Meteorology	0
Anatomy, etc.	0		
	472		33

In January, 1901, the Faculty voted: "That it is inexpedient for this Faculty to accept the certificate of the College Entrance Examination Board for the Middle States and Maryland, and that the Dean [of the Faculty] be instructed to communicate this decision to the Secretary of the Board."

The members of the Administrative Board of Harvard College for 1900-01 were: The Dean of the College, Professors de Sumichrast, Willson, C. P. Parker, Gross, Grandgent, Gardiner, Coolidge, Johnson, Ward, and Gulick; Doctors Robinson, Palache, and Russell; and Messrs. Nichols, Cram, Wright, and Cobb.

In the course of the year the Board suspended one Junior, one Sophomore, and one Freshman for dishonesty in written work, and one Junior for disorderly and disingenuous conduct. The Faculty expelled two Special Students,—one for forgery, the other for imposture. The Board closed the probation of one Junior and one Freshman. Two Seniors, one Sophomore, five Freshmen, and ten Special Students withdrew under more or less pressure. Outside of these cases of discipline, the meetings of the Administrative Board were uneventful.

Through the generous courtesy of Hon. George Frisbie Hoar, Class of 1846, the first public meeting held by the Committee on the Publication of Academic Distinctions in Harvard College was

assured of success. The award of prizes was announced; "Deturs" were presented; and the highest undergraduate scholars were honored by an address from the Senator. The scholars of the First Group were afterward entertained in Boston at the house of Mr. Henry Lee Higginson. Fifty-one students, against forty-eight in 1899-1900, won a position in the First Group of Scholars:—

Of the fifty-one, twenty belonged to the Class of 1901, fourteen to the Class of 1902, and seventeen to the Class of 1903. Massachusetts contributed thirty-four; New York, eight; Pennsylvania, two; Rhode Island, Connecticut, Ohio, Indiana, Illinois, Iowa, and Missouri, one each. The preparatory sources represented are thirty-nine: the Boston Latin School appears seven times in the list; Phillips Academy (Andover) and the Lynn Classical High School appear three times each; the Phillips Exeter Academy, the Roxbury Latin School, and the Boston English High School, twice each.

The Jacob Wendell Scholarship, the gift of the late Jacob Wendell of New York, became available in the Sophomore Year of the present Senior Class. It differs from most other Scholarships in being a prize for which any man, rich or poor, may honorably compete; and it is awarded every year to that member of the last Freshman Class who, in the judgment of the Faculty, has the strongest record in his studies. The present marking system makes an accurate rank list impossible; but the Committee on Scholarships can usually find a scholar who may fairly be called first. The Richard Augustine Gambrill Scholarship, with an income of \$425, is commonly awarded to the Senior who for three years together has the strongest record in his class among legitimate applicants for scholarships in money. Both the Jacob Wendell Scholarship and the Richard Augustine Gambrill involve a judgment of the Committee in a somewhat delicate question of rank. A similarly delicate question must be answered now and then at the lower end of the list of scholarships awarded in open competition: among students whose records appear to be equal, one or two must be chosen for aid, the others left unaided.

In my report for the academic year 1898-99, I called attention to the need of more scholarships in Harvard College. This year a Senior or a Junior who holds a scholarship won in open competition must have attained Grade *A* in half his work for the year 1900-01, and not less than Grade *B* in the other half; a Sophomore must have attained the equivalent of two *A*'s and three *B*'s,—and even with this record a number of needy Sophomores have not received scholarships. Moreover, the record which wins a scholarship for a

CLASS.	NAME.	SCHOLARSHIP.	HOME.	SCHOOL.
'08	John Mead Adams	Price Greenleaf	Cambridge	Reading High School.
'02	Ernest Bernbaum	Bowditch	New York, N.Y. . . .	W. C. Readio, Private Tutor.
'03	Halsey Moore Borthwick	Price Greenleaf	Cambridgeport	Manchester, N. H., High School.
'02	Roscoe Conkling Bruce {	Bowditch	} Indianapolis, Ind. . .	The Phillips Exeter Academy.
	Henry Porter Chandler	Wendell Phillips Memorial .		
'01	Laurence Remick Clapp	Bowditch	Indian Orchard	Leland Stanford Jr. University.
'03	David Cohn	"	South Boston	Boston Latin School.
'01	Alfred Mitchell Dame	"	Buffalo, N. Y.	Buffalo, N. Y., Central High School.
'02	Harold Stearns Davis	John Harvard	Cambridge	Lynn Classical High School.
'01	Paul Dudley Dean	"	Pittsfield	Pittsfield High School.
'01	Charles Frederick Dutch	"	Boston	Boston Latin School.
'02	George Allan England	Class of 1856	Winchester	Winchester High School.
'03	Roger Ernst	Matthews	Hampton, Conn. . . .	Boston English High School.
'03	James Alfred Field	John Harvard	Jamaica Plain	J. P. Hopkinson's.
'02	George Shannon Forbes	Jacob Wendell	Boston	Milton Academy.
'02	Sanford Dewey France	Bowditch	Roxbury	Roxbury Latin School.
'01	Mitchell Freiman	Bigelow	Cobleskill, N. Y. . . .	Oneonta, N. Y., State Normal School.
'01	Sanford Henry Eisner Freund . .	Class of 1856	Boston	Boston Latin School.
'03	Henry Rozalvin Gardner	John Harvard	New York, N. Y. . . .	Phillips Academy, Andover.
'03	Charles Whitney Gilkey	Bowditch	Somerville Highlands .	Boston Latin School.
'02	Arthur Eldredge Goddard	"	Watertown	Watertown High School.
'03	Ralph Harvard Goldthwaite . . .	Farrar	Brockton	Brockton High School.
'01	Ernest Amlin Gray	Bowditch	Brighton	Boston Latin School.
'02	Robert Montravelle Green	Price Greenleaf	Woonsocket, R. I. . . .	Woonsocket, R. I., High School.
'03	Isador Grossman	John Harvard	Boston	Boston Latin School.
'03	Matthew Hale	Price Greenleaf	Cleveland, O.	Cleveland, O., Central High School.
		John Harvard	Albany, N. Y.	Albany Academy, Albany, N. Y.

CLASS.	NAME.	SCHOLARSHIP.	HOME.	SCHOOL.
'01	Walter Stern Heilborn	John Harvard	Boston	Boston English High School.
'03	George Clarkson Hirst	Price Greenleaf	Philadelphia, Pa.	Temple College, Philadelphia, Pa.
'01	William Ernest Hocking	Bowditch	Knoxville, Iowa.	Iowa State College.
'02	John Haynes Holmes	"	Malden	Malden High School.
'01	George Miller Hosmer	"	Somerville	Somerville Latin High School.
'02	Roger Irving Lee	"	Peabody	Peabody High School.
'01	William George Lee	John Harvard	Waukegan, Ill.	Lake Forest University.
'03	Dean Putnam Lockwood	"	St. Louis, Mo.	Smith Academy, St. Louis, Mo.
'02	Joseph Aloysius Love	Price Greenleaf	Webster	The Phillips Exeter Academy.
'01	Frederick Warren Lovejoy, Jr.	Bowditch	Brooklyn, N. Y.	Brooklyn, N. Y., Boys' High School.
'03	Robert William Magrane	Class of 1802	"	Pratt Institute.
'03	John Joseph Mahoney	Bowditch	Lawrence	Phillips Academy, Andover.
'01	Gilbert Holland Montague	Price Greenleaf	Springfield	Springfield High School.
'01	Harvey Field Newhall	John Harvard	Lynn	Lynn Classical High School.
'03	Arthur Stanley Pease	Price Greenleaf	Andover	Phillips Academy, Andover.
'01	Torsten Peterson	Richard Augustine Gambrell, Palfrey Exhibition	} Lynn	Lynn Classical High School.
'03	Augustus Loring Richards	Price Greenleaf	South Sherborn	Boston Latin School.
'01	Charles Franklin Shaw	"	Philadelphia, Pa.	Cheltenham Military Academy.
'03	Elijah Swift	John Harvard	Wollaston	Quincy High School.
'01	Stanley Powers Rowland Thomas	Ruluff Sterling Choate	Peabody	Edward Little High School, Auburn, Me.
'02	Herbert Cahoon Thorndike	Bowditch	East Bridgewater	East Bridgewater High School.
'01	Roland Greene Usher	John Harvard	Grafton	Grafton High School.
'01	Maurice Joseph Wall	Burr	Worcester	Worcester Classical High School.
'02	Raynor Greenleaf Wellington	John Harvard	Roxbury	Roxbury Latin School.
'02	Alain Campbell White	"	New York, N. Y.	Blake's School, New York, N. Y.

Sophomore is made in the Freshman year, when nearly all the competitors are getting their first experience in university methods, when many are newly come from inefficient schools or from schools that seldom send pupils to Harvard College, and when nearly all are required to take Rhetoric and English Composition, in which the marks are proverbially low.

In the present Sophomore Class alone, twenty-six applicants with grades which a few years ago would have insured scholarships have received none; and in the same class thirty-two applicants with grades which would have insured either scholarships or Price Greenleaf Aid have been recommended for neither. In all three classes, between seventy and seventy-five men with such records as a few years ago made college aid a certainty have failed. Among good students the need of money is so great that about \$1000 of the Price Greenleaf money ordinarily used in extending the scholarship list has been set apart for emergencies; but in meeting the expenses of seventy-five men at college \$1000 does not go far. It is only fair to say that the higher average of the marks for Seniors and Juniors in the last year or two is caused in part by the abolition of the half-course in Junior Prescribed English, and by the abolition, for most good students, of the half-course in Sophomore Prescribed English: but there is no such cause for the improved marks of high scholars in the youngest of the competing classes; and after every allowance for prescribed English is made, it is yet certain that the number of our students with very high records has increased, and that it is a good deal harder to win a scholarship than it used to be. The College is believed to be so wealthy, and the actual amount of money for scholarships is so large, that some parents (who think their own boys as good as anybody's) are offended if their sons get no aid; others account for what they call the "loss" of a scholarship by some grave misdemeanor of their sons' which the college authorities have concealed. All these persons overlook the plain arithmetical truth that, if three hundred men apply for one hundred scholarships, two hundred must fail. If all the applicants are deserving, the successful ones are those of highest rank. Rank, an unsatisfactory criterion at best, might in a college of fifty students be disregarded; but in a college of two thousand, where no committee can be personally acquainted with the relative merit of three hundred applicants of whom no two have taken the same elective courses, it must tell for much. High rank commonly indicates superior mental power applied to the fulfilment of college duties, — attention to business, such as augurs well for the student's future; and the occasional award of a

scholarship to a "mark-fiend" who never comes to anything in after life does not destroy this general truth.

In dwelling on the need of scholarships, I do not forget that men may be pauperized. It is commonplace to say that every student, rich or poor, is more or less of a pauper in receiving a college education; and it is almost equally commonplace to say that in America the strength of any one generation is found in large part among men whose parents cannot pay their college expenses, and who through scholarships are enabled to rise to their true intellectual level. Even a student of mediocre power may justify college aid; for, as Senator Hoar remarked in his address to our high scholars, much of the good work of the world is the work of dull men who have done their best. For the degree of Doctor of Philosophy none but students for whom the higher learning is the natural and inevitable aim should be encouraged to study; men who profit by more than a single year of subsidized graduate instruction are a strong and chosen few: boys worth helping through college are unnumbered. Every year eager and deserving youths are turned away from the best college opportunities for want of money; and others who dare to come struggle with constant anxiety and are tempted by the obvious but disastrous economy of underfeeding. The risk of an occasional beggar is nothing to such a risk as this. The College does its best to find for students profitable work, and to prevent dangerous hardship; no one unfamiliar with the inner working of its government begins to know how much time and effort are spent in the problems of needy students: yet, though a youth of "high scholarship" and "high character" is seldom allowed to go away for want of money, the definition of "high scholarship" becomes more and more exacting. Harvard College might well use twice as many scholarships as it has now.

To persons interested in the social life of students the most important gift of the academic year, and one of the most important ever received by the University, is the building for the new Harvard Union. Though not ready for use until this autumn, it was open for the inspection of graduates on Commencement Day; and on that day many graduates joined the Union as life members. For years the want of such a building has been known to all who believe that occasions in which many hundred members of the University come together for a common purpose are essential to college life and college loyalty. Comparisons unfavorable to Harvard are often drawn between Harvard and other colleges, whose members,

whether in athletics, or in literary exercises, or in religious observances, move together as one man.

Reasons for an apparent want of unity in Harvard University are many. A college close to a large city is exposed to the influence and to the diversified interests of that city; and though many of these interests are of the best, and though one element of strength in Harvard is its proximity to Boston, there is no doubt that students isolated in a country town, or living in a city of moderate size far away from anything that may be called a metropolis, find their interests centred nearer the university and nearer one another.

Another cause of diversity of interests is the development of the elective system. Thirty years ago, all Harvard Freshmen had the same studies and usually the same teachers; and in certain subjects half the class would recite together: now a student may go through four years without meeting all his classmates. Though this variety of interests gives Harvard University a strength of its own, it tends to prevent that other kind of strength which springs from united action, and that kind of college spirit which common interests foster.

The mere size of the University has made it impossible for all the students to belong to any one society or club; and the older societies and clubs, though their influence has steadily improved, are sometimes believed to promote the formation of cliques. At best, they cannot be thoroughly democratic. The Harvard Union is a club to which every member of the University is welcome on the payment of a small admission fee. It has suitable rooms for committees and societies, a good restaurant such as has long been needed in Cambridge, a reading room, a small but constantly growing library, offices for athletics and for the college press, and a large main hall suitable for mass meetings, impromptu concerts, and gatherings of all sorts. Even now, after an existence of a few weeks, it has aroused such united enthusiasm as the University has never known; and it cannot fail now and always to promote the best kind of democracy.

L. B. R. BRIGGS, *Dean.*

THE LAWRENCE SCIENTIFIC SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — As Dean of the Scientific School I submit the following report for the academic year 1900–01.

The following tables of statistics show that the decrease of attendance which, on the basis of the experience of the other schools of this University, was expected to follow the somewhat rapid annual addition to the entrance requirements, has not yet come about. These additions have already increased the number of required points from the total of fifteen in 1898 to a total of twenty-one at the last entrance examinations. Yet in the present year the gain in registration has exceeded that of any year since 1893. Inspection of the tables, however, shows that the increase this year was not due to admissions by examination, but (1) to a greater resort to the School by persons who had been members of other scientific schools and colleges, and (2) to the fact that a larger proportion than heretofore of those registered in the previous year returned to the School. Since 1899, when the plan of adding two points each year to the number required for entrance was put in operation, the total registration of the School has increased from 410 in 1898–99 to 549 in 1901–02. Thus, while the last stages of the process in 1902 and 1903 may lead to some reduction in the number of students enrolled in the School, there is reason to believe that the decrease will not be serious.

SPECIAL STUDENTS.

Number of years in attendance.	1900-01 to Nov. 26.	1901-02 to Nov. 21.
One	53	59
Two	14	16
Three	10	6
Four	5	4
Five	0	2
Totals	82	87

REGISTRATION BY CLASSES IN L. S. S. CATALOGUE.

Class.	1900-01 to Nov. 26.	1901-02 to Nov. 21.
Fourth-Year	69	76
Third-Year	65	88
Second-Year	136	141
First-Year	155	157
Specials	82	87
Totals	507	549

REGISTRATION FOR ADMISSION EXAMINATIONS.

Year.	Preliminary.	Final.	Total.
1900	104	275	379
1901	68	216	284

DISTRIBUTION OF STUDENTS IN FOUR-YEAR PROGRAMMES.

Programme.	1900-01 to Nov. 26.	1901-02 to Nov. 21.
Civil Engineering	62	56
Mechanical Engineering	64	82
Electrical Engineering	42	49
Mining and Metallurgy	42	67
Architecture	26	29
Landscape Architecture	11	9
Chemistry	21	32
Geology	6	5
Biology	10	12
Anatomy, etc.	31	30
Teachers of Science	22	21
General Science	170	157
Totals	507	549

It having become evident that the steady increase in the entrance requirements would make it difficult for the greater number of public high schools to prepare pupils for admission, the masters of schools which have sent us candidates were invited to a conference held on July 12th, 1901. At a like meeting held in February, 1897, there was a general agreement of the masters that it would be well to have the weight of those examinations for entrance to the Lawrence School, as measured in points, brought to the grade required by Harvard College. While it was then recognized that this change would be likely to debar many youths from the Scientific School, it was felt that it would in other ways be distinctly advantageous to the public high schools and the academies.

The last conference with the masters of public schools showed that, after four years of experience with the gradually increasing requirements of the Lawrence Scientific School, they were still in favor of the gradual increase. Some doubt, however, was expressed concerning the ability of the ordinary high school to prepare candidates to pass in a total of twenty-six points as will be required in, and after, 1903. There can be no question that many rural English High Schools, because they lack Chemical and Physical laboratories, as well as teachers in those or other branches of science, will find it impossible to fit their pupils to pass in enough studies for entrance to either Harvard College or the Lawrence Scientific School.

To meet this difficulty, the Lawrence Scientific School has for a number of years been engaged in an interesting experiment with that group of students known as "Specials." For some years after the School began rapidly to increase in numbers, the greater part of the attendance consisted of such persons, entering without previous examination. Although the regulations concerning the admission of these Special Students were intended to ensure that they had received a training sufficient to prepare them to go on with the studies they wished to pursue, the result was that many persons were admitted who lacked a sound preliminary education. For some years the Administrative Board of the School has determined to restrict the admission of Special Students to those who fall into one or the other of two categories: First, the very limited number, mostly persons of considerable maturity, who wish to engage in some particular study, such as Analytic Chemistry or Architectural Drawing, and have no intention of seeking a degree; second, those who, because they come from schools where they could not obtain an adequate preparation, are not fitted to present themselves for examination in the required number of subjects for admission to regular standing.

Candidates for admission as Special Students who clearly belong in the first of the above-named groups are admitted on evidence of good character and of training sufficient to enable them to take the studies which they wish to pursue. Each of those in the second group is required to pass satisfactory examinations in entrance subjects aggregating twelve points, including the required entrance mathematics. He is, moreover, required to have from the master of the school whence he came, or which he has last attended, written consent to his request for admission as a Special Student. When a student is thus admitted as a Special Student he is expected to make good his entrance conditions within two years and to obtain regular standing. If he is a person of capacity he can do this in part by obtaining a satisfactory grade in advanced studies, which directly continue those of an elementary sort included in the entrance examinations, and in part by devoting the greater part of the two summers following his admission to elementary work. For such preparation the summer courses of instruction offered by the Faculty of Arts and Sciences may afford much help.

That this method of accepting the certificates of schoolmasters as to the ability and character of their pupils who seek admission as Special Students is valuable, is clearly shown by the fact that, notwithstanding the burdens they have to carry in their first year in the

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School, a considerable proportion have found it possible to obtain their degrees in not more than five years. The system has the evident advantage that it enables the high schools which can teach but few subjects, but teach those efficiently, to send their abler pupils to this School.

At the conference of last July it was generally urged by the schoolmasters that Civics and Government be added to the optional studies in which examinations may now be taken for admission to the Lawrence Scientific School, on the ground that the subject is important, that it is, on the whole, well taught in the public high schools, and that it is in its nature suitable for such use. The Administrative Board has recommended such action to the Faculty of Arts and Sciences. At the same meeting it was proposed that, as systematic instruction in Music was now given in certain schools, an entrance examination in Harmony be established. On this proposition no action has as yet been taken.

The tables show the changes in the attendance in the several four-year programmes of instruction. It will be noted that, while the number of those registered in the programme of General Science has still further and considerably decreased, the attendance on the others has become greater. The gain is most notable in Mining and Metallurgy, the gain there being due to the better equipment afforded by the Simpkins laboratories, which now afford the long-needed means of teaching in a practical way the most important principles of the art of treating ores. The decrease of attendance in the programme of General Science is not unexpected, nor is it to the disadvantage of the School. It is the natural result of bringing the entrance requirements towards the point where the time needed in preparing for them is about as great as is demanded for those set by the College. The disappearance of this group will relieve the School of those students who are seeking a general training which they can equally well obtain from the College, and leave to the School the task of preparing men for professional employment.

Although the new buildings provided for the Departments of Engineering, Geology, Architecture, and Mining were not entirely completed at the beginning of the present academic year, there is reason to hope that they will all be ready for use before the end of the first term. There remains the crying need of better quarters for the Department of Chemistry. If these are not soon provided, the lack thereof will be a very serious hindrance to the development of the School. Some instruction in Chemistry is required in all its programmes. As yet, few students enter with sufficient knowledge

of that subject to avoid further study of it. As the Department of Chemistry gives preference to those who at the beginning of the year are enrolled in the regular classes of the School, none of this group of students have as yet been deprived of their needed opportunities. But some students register late, and a considerable number of those enrolled as Specials are seeking regular standing. Some of those enrolled in the School have been unable to obtain desks in the laboratory.

The discipline of the School remains good. During the year four students were put on probation and one was suspended, for handing in work not their own. Sixty-five were put on probation for inadequate performance of duty. In twelve instances the probation was closed because of persistent neglect or failure to accomplish the required work. No instances of drunkenness, gambling, or lewdness came to the knowledge of the administrative officers of the School.

The health of the School has been good, no death having occurred during the academic year. This satisfactory condition is in some part due to the promptness with which cases of illness are reported to the Office and to the efficiency of the medical visitation. The evil of "signing-off" for slight indispositions, such as men in active life cannot afford to consider, has been less noticeable than in previous years. On the average somewhat over 97% of the men are by their own account of themselves fit for duty.

In considering the position of the School with reference to the College and to the Graduate School, it is well to keep in mind the extent to which the instruction in these divisions of the work done in the Faculty of Arts and Sciences has been merged. At present more than half the students enrolled in the several departments which were established in the once distinct Lawrence School are from the other two divisions. In the existing state of the organization, a large number of students enrolled in Harvard College are following substantially the same courses of study as would be required of them were they in some of the four-year programmes of the Scientific School. Some of these men transfer to the School at the end of their third year, with the intention of taking their degree in Arts at the end of the fourth year, and that in Science at the end of the fifth year of their residence at the University. So far the effect of this system has been very satisfactory. It enables industrious students of fair ability to obtain a somewhat extended general education and also sufficient technical training to fit them for the novitiate in several branches of professional science within five years of the time when they enter college. For such men the serious diffi-

culty of beginning professional life at a too advanced age, which is encountered by those college graduates who resort to the schools which fit for Law or Medicine, is effectively solved. Entering college at eighteen, a young man who makes a proper choice of his studies is thus enabled to graduate in Engineering at twenty-three, relatively as well equipped for professional duty as he would be in the other professions for which he would not be made ready until he was twenty-six years old.

N. S. SHALER, *Dean.*

THE GRADUATE SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR, — As Dean of the Graduate School I have the honor to present my report upon the School for the academic year 1900–01.

The members of the Administrative Board for the year were Professors Toy, Jackson, Davis, Byerly, M. Warren, Strobel, von Jagemann, Hart, Kittredge, Münsterberg, and the Dean of the School. The only member who had not been in service during the previous year was Professor Strobel. He replaced Professor B. O. Peirce, who was absent from the University on leave.

The Board met nine times in the course of the year, oftener in the opening and closing months than in the middle of the year. The ordinary routine business of the Board was the admission of students to the School and to candidacy for the higher degrees, action on programmes of courses offered by students for the degree of Master of Arts, and consideration of various petitions and inquiries.

The topics to be discussed in this report are, first, the membership of the School; second, the degrees for which recommendations were made at the close of the year, and the holders of these degrees; third, fellowships and scholarships; and, fourth, miscellaneous topics. Much information about the membership and character of the School may be given in tabular form. As the Tables for the most part explain themselves, my remarks upon them will be brief.

- I. Number and classification of students (resident and non-resident; students doing full or partial work; fields of study; length of connection with the School; holders of Bachelor's and of the higher degrees): 1898–99, 1899–1900, 1900–01.
- II. Resident Students doing full work, and Non-Resident Students: 1886–1901.
- III. Percentage of students in their first and following years: 1896–1901.
- IV. Colleges and Universities represented, with Degrees held: 1900–01.
- V. Colleges and Universities represented by four or more graduates in the School: 1896–97, 1897–98, 1898–99, 1899–1900, 1900–01.
- VI. Migration of Graduate Students.
- VII. Birthplaces of Graduate Students: 1894–1901.
- VIII. Residences of Graduate Students: 1899–1901.
- IX. Recommendations for Degrees in 1899, 1900, 1901.
- X. Divisions and Departments in which recommendations for the Higher Degrees were made in 1901.
- XI. Age of Graduate Students recommended for the Degrees of Master of Arts and Doctor of Philosophy: 1901.
- XII. Age of Doctors of Philosophy created in 1897–1901.
- XIII. Fellowships and Scholarships: numbers and classification of applicants and appointees in 1899–1900, 1900–01, 1901–02.

STUDENTS.

The number of students registered in the School for 1900-01 was three hundred and fifty-three, a larger number than in any previous year. This number does not include a few men who were in the School for a period of less than six weeks at the opening of the year. To these three hundred and fifty-three persons who were actually members of the School might be added twenty-three members of the Class of 1901 in Harvard College who, in their Senior year, were pursuing studies that had been approved for the degree of Master of Arts.

TABLE I. — NUMBER AND CLASSIFICATION OF STUDENTS.

	1898-99.	1899-1900.	1900-01.
I. Resident Students doing full work in the School for the whole academic year . . .	218	227	226
Resident Students not doing full work or not working for the whole year as resident students	103	99	113
	— 321	— 326	— 339
Non-Resident Students holding fellowships . . .	12	13	14
Non-Resident Students not holding fellowships . . .	3	2	0
	— 15	— 15	— 14
II. Students whose studies lay chiefly in *			
1. Semitic Languages and History	3	0	1
2. Ancient Languages (Classics and Sanskrit) . . .	47	55	47
3. Modern Languages (including Comparative Literature)	80	83	75
4. History and Political Science	54	54	53
5. Philosophy (including Education)	52	48	65
6. Fine Arts (including Architecture)	4	4	4
7. Music	1	1	1
8. Mathematics	19	12	20
9. Engineering	0	4	6
10. Physics	15	10	14
11. Chemistry	19	17	19
12. Biology	25	21	21
13. Geology	9	10	14
14. American Archaeology and Ethnology . . .	1	3	3
Unclassed Students	7	19	10
	— 336	— 341	— 353
III. First-year Students	186	181	189
Second-year Students	72	85	83
Third-year Students	44	38	52
Fourth-year Students	20	24	14
Students in a fifth or later year	14	13	15
	— 336	— 341	— 353

* For detailed statistics as to the number of Graduate Students enrolled in the various courses of instruction offered by the Faculty of Arts and Sciences, see the Report of the Dean, pp. 52-77.

IV. A.B.'s and S.B.'s of Harvard University and of no other institution	118	101	101
A.B.'s and S.B.'s (and holders of similar degrees) of other institutions and also of Harvard University	34	33	33
Students not holding the Harvard degree of A.B. or S.B.	184	207	219
	— 336	— 341	— 353
Students holding the Harvard degree of A.M., S.M., Ph.D., or S.D.	102	108	100
Students holding the Harvard degree of A.B. or S.B., but not of A.M., S.M., Ph.D., or S.D.	97	84	88
Students holding no Harvard degree in Arts, Philosophy, or Science	137	149	155
	— 336	— 341	— 353

Admission to the Graduate School is ordinarily granted to holders of the Bachelor's degree of good colleges and to a few other persons of maturity. Recent graduates of colleges where the course of study would not secure admission to the Senior Class of Harvard College, with or without conditions, and men from unknown colleges are commonly not admitted to the Graduate School, but are expected to seek admission as Undergraduates or as Special Students in Harvard College; if their record here justifies it, they are sometimes transferred to the School after the Mid-Year examination period. The Administrative Board accepts in all such cases the ruling of the Faculty's Committee on Admission from other Colleges. Although the degree of Bachelor of Arts is open to students in the Graduate School, it is the policy of the Board to advise recent graduates of other colleges who seek this degree to secure admission to the Senior Class. The colleges and universities that were represented in the School in 1900-01 are named in Tables IV-VI.

The foregoing Table (Table I) exhibits the usual classification of the students of the School and is given for convenience of comparison for the three successive academic years, 1898-99, 1899-1900, 1900-01.

Of the Resident Students three hundred and five were in attendance throughout the whole year. Of this number two hundred and twenty-six, including all holders of fellowships and scholarships, were engaged in what is defined as a complete year of work (four courses of advanced grade or their equivalent) or were doing a larger amount of work. Seventy-six of the number in residence throughout the year were doing partial work, which ranged from a course to three courses. Of the remaining thirty-seven Resident Students, twenty-three entered after November 1, 1900, and fourteen withdrew before the close of the year.

TABLE II. — RESIDENT STUDENTS DOING FULL WORK, AND NON-RESIDENT STUDENTS: 1886-1901.

	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.
Resident Students doing full work in the School for the whole academic year	38	48	50	62	62	108	127	162	161	175	194	171	218	227	226
Resident Students not doing full work or not working for the whole year as resident students	26	36	39	34	55	79	73	86	94	105	96	107	103	99	113
Whole number of Resident Students	64	84	89	96	117	187	200	248	255	280	290	278	321	326	339
Non-Resident Students holding fellowships	10	10	9	11	11	9	9	10	12	13	14	15	12	13	14
Non-Resident Students not holding fellowships	4	3	1	4	4	4	7	1	5	6	2	..	3	2	..
Whole number of Non-Resident Students	14	13	10	15	15	13	16	11	17	19	16	15	15	15	14
Whole number of students	78	97	99	111	132	200	216	259	272	299	306	293	336	341	353
Percentage of Resident Students doing full work for whole academic year	59	57	56	65	53	58	64	65	63	63	67	62	68	70	67

The subjoined Table (II) gives the statistics since 1886-87, when such statistics were first recorded, of Resident Students doing full or partial work, and of Non-Resident Students.

A Graduate School of Arts and Sciences differs essentially from a college, a technical, or a professional school, in that while in the latter a fixed amount of work is necessarily prescribed for each student and each student is expected to complete a well defined course which is to prepare him for his place or career among men, in the Graduate School no such requirement is imposed, except for candidates for degrees. In the Graduate School branches of learning and science are explored with a view less to professional expertness and attainment than to the enlargement and advancement of learning and science in and through the student. Consequently there will be many different types of men in a Graduate School, men of different aims and schemes of work, men who are able to devote their entire time and men who can give but a portion of it to their studies. Although it is through the former class that the School does its most effective work, the latter class is equally important and significant. It is therefore of interest to take special note of the minority — about one-fourth — of Resident Students who in 1900-01 were registered for less than full work. Of the seventy-six who in 1900-01 were doing partial work throughout the year, seventeen were teachers at this University either as assistants or as instructors; twenty were teachers in actual service in neighboring colleges or schools; four were clergymen in charge of congregations; three were students in a neighboring institution, and of the remaining twenty-two a good proportion were men who had nearly completed the requirements for one of the higher degrees and found it necessary to register only for a small amount of instruction. The value of the opportunities afforded by the Graduate School to students of all these classes should be more fully appreciated by the community. Many of the teachers referred to above were enrolled in the courses on Education and Teaching. There is no good reason why a much larger number of teachers in the colleges and schools of eastern Massachusetts might not avail themselves of the opportunities for advanced work that are offered by the Faculty of Arts and Sciences.

The class of Non-Resident Students included all holders of travelling fellowships and other fellowships held by students away from Cambridge, and in 1900-01 no other persons. In no year since the establishment of the Graduate Department in 1872 has the number of Non-Resident Students exceeded nineteen. And no degree is conferred by this University upon such students for work

done exclusively in absence. Such work if used for a degree must be supplementary to that done during at least one year of previous residence. In fact, the privilege of Non-Resident membership is open only to men who have already resided at the University for a satisfactory period.

The second division of Table I indicates in general the several fields of learning and science in which the work of the students chiefly lay. Classification here is difficult, since in the case of many students the work of each lies in more than one department, a fact that cannot be noted in this Table. Detailed information about the choice of studies of Graduate Students in the several departments may be obtained from the statistics which are given in the Report of the Dean of the Faculty of Arts and Sciences. The steady and almost uniform attraction that several of the great departments of learning exercise upon advanced students is apparent from the Table. In 1900-01 the subjects, arranged according to the number of students that pursued them, were:—

Modern Languages,	Chemistry,
Philosophy (including Education),	Physics,
History and Political Science,	Engineering,
Ancient Languages,	Fine Arts (including Architecture),
Natural History (Biology and Geology),	American Archaeology and Ethnology,
Mathematics,	Music.

The large proportion of men who were students of the languages, modern and ancient (36%), and of the historical and philosophical sciences (37%), as against the students of the mathematical, physical and natural sciences (27%), is at least noteworthy. The recent great growth of the School has been divided with remarkable unevenness between the languages and the historical and philosophical sciences on the one hand, and the mathematical, physical, and natural sciences on the other. In this the experience of this School has been different from that of most other Graduate institutions of learning.¹

An inspection of the next division of the Table (and of Table III, below) shows that the proportion of students who were in the School for a second year has been slightly reduced, while that of students remaining for the third year has increased. As in the past, somewhat more than one-half of the members of the School have been in it but one year. Somewhat more than half of these received the

¹ A table of statistics for this University is given in the *Harvard Graduates' Magazine*, December, 1900, p. 286.

degree of Master of Arts at the close of the year. About one-fourth have been in the School for two years only, while nearly the same number have been in it for three or more years. It must be remembered that for many of the First-year Students — those who have pursued graduate study elsewhere — their first year at this University is really often a second or a third year of graduate study. Table III

TABLE III. — PERCENTAGES OF STUDENTS IN THEIR FIRST AND FOLLOWING YEARS: 1896–1901.

	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
First-year Students	51	51	55	53	54
Second-year Students	23	25	21	25	23
Third-year Students	16	15	13	11	15
Fourth-year Students and Students of longer residence . .	10	9	11	11	8

shows that for the last five years the proportion of Second-year, Third-year, and Fourth-year Students has been remarkably uniform, while that of First-year Students has only slightly increased. It is clear that men who resort to the Graduate School for only one year of work are likely to continue to be the majority of its students, and it is desirable that steps should be taken to make as effective as possible this single year at the University.

The members of the Graduate School are for the most part a company of rather mature young men, who have devoted a considerable time, since receiving their first degree, to intellectual work either as teachers or as Graduate Students here or elsewhere. For of the First-year Students in 1900–01, less than thirty per cent. had entered the School immediately on receiving their first degree (54); about twelve per cent. had received this degree in 1899 (23); about eleven per cent. in 1898 (22); about ten per cent. in 1897 (20), while the remainder — about thirty-seven per cent. (70) — had received this degree in 1896 or earlier, four or more years before they entered the School. With hardly an exception the seventy per cent. who had been one or more years out of college before coming to the School had been carrying on graduate studies at other colleges or universities or had been engaged in teaching, or both. The Graduate School as yet appears to make no strong appeal to very young men, in the Senior classes either of Harvard College or of other colleges.

TABLE IV. — COLLEGES AND UNIVERSITIES, WITH DEGREES HELD.

	A.B.	S.B.	LITT.B.	Ph.B.	A.M.	S.M.	Ph.D.	S.T.B.	LL.B.	M.D.	No. De- grees.	No. Per- sons.
Acadia University, N. S.	3				1						4	3
Albany Law School, N. Y.									1		1	1
Allegheny College, Pa.	2										2	2
Amherst College, Mass.	7	3									10	10
Antioch College, O.	1										1	1
Bates College, Me.	3				1						4	3
Beloit College, Wis.	2	1		1							4	4
Boston University, Mass.	3			1	2		1	1			8	5
Bowdoin College, Me.	9			1	3						12	9
Brown University, R. I.	10			1	1						12	11
Bucknell University, Pa.	2				1						3	2
California, University of *	2	2	1	2	1	1					10	7
Cambridge, University of, Eng.	1										1	1
Carleton College, Minn.	1										1	1
Central Pennsylvania College		1				1					2	1
Chicago, University of, Ill.	1			2							3	3
Cincinnati, University of, O.			1								1	1
Colby College, Me.	3				1						4	3
Colgate University, N. Y.	1				1						2	1
Colorado, University of						1					1	1
Columbia University, N. Y.											1	1
Columbia University, D. C.	2			1	1						3	3
Cornell University, N. Y.	1										1	1
Dalhousie University, N. S.	3	1			2	1					7	4
Dartmouth College, N. H.	5		1								6	6
Delaware College	1										1	1
Denison University, O.		1				1					2	1
De Pauw University, Ind.	1				1						2	1
Dickinson College, Pa.	2				2						4	2
Drake University, Ia.	1				1						2	1
Drew Theological Seminary, N. J.								1			1	1

[illegible]

* Besides the degrees enumerated above, the following were held by one or two persons, as indicated: Litt.D., Penn College, Ia.; Litt.M. (3), University of California, and University of Wisconsin; Heb.B., Iabba, Hebrew Union College, O.; Mech. Eng., University of Virginia; Ped.B. (2), New York State Normal College, and Ohio University; Ph.M. (2), Iowa Agricultural College, and Ohio University; S.D.B., Missouri State Normal School, Warrensburg. There were, further, in the School one Graduate each of Andover Theological Seminary, Mass.; Newton Theological Institution, Mass.; Reformed Presbyterian Theological Seminary, Pa.; and Rochester Theological Seminary, N.Y. Columbia University, N.Y., Harvard University, and the University of Virginia were each represented by one Non-Graduate; Clark University, Mass., by a student who has since received the degree of Ph.D. from that institution. There were two students from European universities who had received no academic degree. Two students who had no college training were admitted to the School on special grounds.

The fourth division of Table I shows in general the extent to which the School draws its members from Harvard University, as contrasted with other institutions (for detailed information on this point Tables IV, V, and VI should be consulted). About fifty-six per cent. of the students of the School held a degree from Harvard University. About sixty-two per cent. of the members of the School did not hold the first Harvard degree in Arts or Science. The increase in the membership of the School has been of late years due almost entirely to persons who hold no Harvard degree.

	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.
Percentage of Students holding no Harvard degree . .	40	40	41	44	44
Percentage of Students holding no Harvard first degree in Arts	52	55	55	61	62

Tables IV-VIII supplement each other and show in detail the extent to which the different higher institutions and different parts of the country are represented in the Graduate School. In Table IV are given the various colleges and universities and the professional and technical schools whose graduates were members of the School in 1900-01, together with the degrees these men held and the number of different men from each institution.

These Tables show that Harvard University continues to draw its Graduate Students from the whole country, and, to a slight extent, from foreign countries, a larger number of institutions being represented in the School than in any previous year.

The most common degree held by members of the School was that of Bachelor of Arts; next, that of Master of Arts. Of the three hundred and eighty-four Bachelor degrees in the School, three hundred and four were Bachelor of Arts and forty-two Bachelor of Science. As compared with previous years the proportion of Bachelors of Science as against Bachelors of Arts is slightly, though only slightly, increasing. There were one hundred and seventy-seven Masters of Arts, fifteen Masters of Science, and twenty Doctors of Philosophy in the School in 1900-01, as against one hundred and sixty-seven Masters of Arts, thirteen Masters of Science, and eight Doctors of Philosophy in 1899-1900. The increasing popularity of the degree of Master of Science deserves note.

The number of colleges that send each year a considerable group of students to the Graduate School is remarkably constant (Table V).

TABLE V.—COLLEGES AND UNIVERSITIES REPRESENTED BY FOUR OR MORE GRADUATES IN THE SCHOOL:
1896-97, 1897-98, 1898-99, 1899-1900, 1900-01.

1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.
Harvard, Kansas, Wesleyan (Conn.), Amherst, California, Oberlin, Dartmouth, Indiana, Brown, Tufts, Bowdoin, Leland Stanford Jr., Michigan, Vermont, Western Reserve,	Harvard, Kansas, Brown, California, Dartmouth, Vermont, Amherst, Northwestern, Oberlin, Princeton, Toronto, Wesleyan (Conn.), Western Reserve, Acadia, Indiana, Leland Stanford Jr., Mass. Inst. Tech., Ohio Wesleyan, Yale,	Harvard, Yale, Brown, California, Leland Stanford Jr., Toronto, Bowdoin, Northwestern, Tufts, Amherst, Haverford, Indiana, Iowa, Kansas, Michigan, Western Reserve,	Harvard, California, Amherst, Michigan, Oberlin, Leland Stanford Jr., Northwestern, Brown, Haverford, Pennsylvania, Toronto, Tufts, Wesleyan (Conn.), Beloit, Boston Univ., Bowdoin, Colby, Dalhousie, Indiana, Kansas, Nebraska, Rochester, Western Reserve, Williams, Yale,	Harvard, Brown, Amherst, Bowdoin, Oberlin, California, Illinois, Michigan, Yale, Dartmouth, Toronto, Wesleyan (Conn.), Williams, Boston Univ., Kansas, Northwestern, Pennsylvania, Tufts, Beloit, Dalhousie, Haverford, Nebraska, New Brunswick,
174 8 8 7 7 7 6 6 5 5 5 4 4 4 4 4	178 7 7 6 6 6 5 5 5 5 5 5 5 4 4 4 4 4	198 10 8 8 7 7 6 6 6 5 5 5 5 5 4 4	191 8 7 7 6 6 6 5 5 5 5 5 4 4 4 4 4 4 4 4 4 4	197 11 10 9 9 7 7 7 7 6 6 6 6 5 5 5 5 5 4 4 4 4 4
Total Membership,	293	336	341	353

Leaving Harvard graduates out of consideration, it appears that in 1896-97 there were fourteen colleges represented in the School by four or more graduates; in 1897-98 there were eighteen; in 1898-99, fifteen; in 1899-1900, twenty-four; and in 1900-01, twenty-three.

The colleges and universities that have been steadiest in the supply of Graduate Students for the past four years, each sending from four to eleven students every year, are: Amherst, Brown, California, Kansas, Northwestern, Toronto, and Yale.

Five members of the Graduate School were holders of fellowships or scholarships which had been offered by other institutions or organizations: namely, scholarships of the Harvard Clubs of Chicago, San Francisco, and St. Louis, awarded to competent graduates of local colleges who entered the Graduate School; travelling fellowships from Dalhousie University (the Exhibition Science Scholarship) and from the University of Pennsylvania (the Hector Tyndale Fellowship).

A large number of the Resident Students in the Graduate School had pursued graduate studies at other American colleges and universities and at foreign universities. For such work in a number of cases they held degrees. Many of these men became or are to become candidates for the Doctor's degree at this University, and Graduate studies pursued at another university are accepted, if properly attested and otherwise satisfactory to the respective Divisions of the Faculty, in partial fulfilment of the requirement of at least two years of Graduate study for the degree, one of these years being, according to the statute, spent in residence at this University.

In 1899-1900 one hundred and eight of the members of the School, or nearly one-third, had carried on Graduate studies elsewhere. In 1900-01 one hundred and thirty-nine, or about two-fifths of the members of the School, had already been Graduate Students elsewhere, and of these, fifty-eight had received degrees for these studies (A.M., S.M., or Ph.D.). One hundred and sixty-four had pursued similar studies at this University, for one or more years.

The colleges and universities at which three or more men in the Graduate School in 1900-01 had previously pursued Graduate studies are given in Table VI.

TABLE VI.—MIGRATION OF GRADUATE STUDENTS.

Harvard, 164,	Boston University, 3,
Chicago, 19 (including 8 summer students),	Clark, 8,
California, 6,	Dalhousie, 3,
Columbia, 5,	Michigan, 3,
Pennsylvania, 5,	Munich, 3,
Brown, 4,	Nebraska, 3,
Illinois, University of, 4,	Oberlin, 3,
Johns Hopkins, 4,	Wisconsin, 3,
Leipsic, 4,	Yale, 3.

Besides these, other colleges and universities where one or two members of the School had pursued Graduate studies are: Acadia, American School of Classical Studies at Athens, American School of Classical Studies in Rome, Bowdoin, Columbian, Cornell, Denison, Dickinson, Illinois College, Kansas, Miami, Minnesota, Mississippi, New Mexico, New York, Northwestern, Ohio State, Ohio, Ohio Wesleyan, Princeton, Toronto, Trinity (N. C.), Tufts, Virginia, Wesleyan (Conn.), Western Reserve, West Virginia, and Williams; and the following foreign universities: Berlin, Freiburg in Baden, Heidelberg, Jena, Paris, Tübingen, Vienna, and Zurich. To these should be added the theological seminaries at Allegheny (Reformed Presbyterian), Andover, Boston University, Cambridge (Episcopal), Hartford, and Rochester.

The fields of study of these migrating students were — for subjects in which there were seven or more — as follows: —

Philosophy, 26,	Modern Languages (not including
Classics, 23,	English), 8,
History and Political Science, 21,	Geology, 8,
English Language and Literature, 13,	Chemistry, 8,
Natural History (Botany, Biology,	Physics, 8,
etc.), 9,	Mathematics, 7.

A group of Graduate Students that might be classified with that of the migrants is that of teachers who are in the School upon leave of absence from their respective colleges or schools, and who expect to return to the positions they have left. They are men who for the most part have been successful, and in some cases have attained distinction, in their profession, and they come to the University for a year or two of advanced study in their special departments, the better to fit themselves for their chosen work. In 1900–01 twenty-three colleges were represented in the School by as many men, members of their Faculties on leave of absence; and five preparatory schools or other institutions of the same grade were similarly represented.

This enumeration does not include the large number of men in the School doing partial work who are actively engaged each in the pursuit of his profession in or near Boston, chiefly teachers in preparatory schools and colleges, and a few clergymen (see above, page 117). In the same category with these might be included a considerable number of the men who, being members of the Graduate

School, serve the University as instructors, teaching fellows, and assistants. In 1900-01 there were forty-seven such.

TABLE VII. — BIRTHPLACES OF GRADUATE STUDENTS: 1894-1901.

	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-1900.	1900-01.
Students born in the New England States	109	131	141	121	143	122	127
Students born in other Northern States east of the Mississippi River	97	85	86	89	106	119	136
Students born in Southern States east of the Mississippi River	20	19	13	19	15	17	16
Students born in States west of the Mississippi River	17	25	25	26	30	34	30
Students born in the Dominion of Canada	16	16	17	18	25	23	21
Students born in other foreign countries	13	23	24	20	17	26	23
Total number of students	272	299	306	293	336	341	353
Percentage of students born in New England	40	44	46	41	43	36	36
Percentage of students born elsewhere	60	56	54	59	57	64	64

TABLE VIII. — RESIDENCES OF GRADUATE STUDENTS: 1899-1901.

	1899-1900.	1900-01.
New England States	154	167
Northern States east of the Mississippi River	94	99
Southern States east of the Mississippi River	22	16
States west of the Mississippi River	45	46
Canada	19	18
Foreign countries	7	7
	341	353

These Tables (VII, VIII) show that nearly two-thirds of the members of the School in 1900-01 were born out of New England, and that the proportion of such men is on the increase. On the other hand nearly one-half of the students claim residence in New England. A comparison of these two Tables shows accordingly that a considerable number of persons not of New England birth have immigrated into it.

DEGREES.

One hundred and sixty-two persons were recommended* for the higher degrees at Commencement, 1901.

The details are found in the following Table (IX), which gives in its first and second parts the number of students in the Graduate School recommended by the Faculty of Arts and Sciences for any degree, and the number of other students recommended for the degree of Master of Arts, Master of Science, and Doctor of Philosophy in the three years 1899, 1900, 1901. In the third part of the Table all persons recommended for the higher degrees (A.M., S.M., Ph.D., and S.D.) are classified with reference to their previous graduation as Bachelors of Arts or of Science.

TABLE IX. — RECOMMENDATIONS FOR DEGREES IN 1899-1901.

	1899.	1900.	1901.
I. Graduate students recommended for A.B. . . .	8	10	18
Graduate students recommended for A.M. . . .	97	106	92
Graduate students recommended for S.M. . . .	6	1	9
Graduate students recommended for Ph.D. . . .	21	35	29
Graduate students recommended for S.D. . . .	1 133	1 153	0 143
I. College Seniors recommended for A.M. . . .	2	0	1
College Seniors of a preceding year, recommended for A.M. on work done in Senior year	16	19	23
College Seniors of a preceding year, recommended for S.M. on work done in Senior year	0	1	0
Professional students recommended for A.M. on special courses of study	8	7	8
Professional students recommended for Ph.D. on special courses of study	2 28	0 27	0 32
Total of the above list	161	180	175
Deduct Graduate students recommended for A.B.	8	10	18
Total number recommended for A.M., S.M., Ph.D., and S.D.	153	170	162
I. Harvard Bachelors of Arts or Science, not previously graduated elsewhere	65	62	59
Harvard Bachelors of Arts or Science, previously graduated elsewhere	20	22	20
Students not Harvard Bachelors of Arts or Science	68 153	86 170	83 162

* The number of persons recommended each year, and that of the men who actually receive the degree, as published in the Annual Catalogue, do not always agree. Usually a few of the candidates recommended do not receive the degree once. The degree is in these cases ordinarily conferred in a later year, as of "the year in which the recommendation was made."

Two remarks may be made upon this Table. The number of college Seniors who receive the degree of Master of Arts for work done in their Senior year in excess of the requirement for the Bachelor's degree is rapidly increasing. (In 1897 there were six; in 1898, nine; in 1899, sixteen; in 1900, nineteen; in 1901, twenty-three.) These men have in reality usually completed the course of study for the Bachelor's degree in three years, but they prefer to receive this degree not at the close of the third year, but at that of the fourth year with their college class. The Master's degree is conferred without further residence and study at the end of the fifth year, and is thus known as a "postponed A.M." In my opinion these men should be catalogued in such a way as to indicate their peculiar relation both to the Bachelor's degree and to the Master's degree.

Attention also should be called to the gradual increase in the proportion of non-Harvard men (that is, men who do not hold the Harvard Bachelor's degree) that are promoted to the higher degrees. In 1901 over 51% of the men recommended for higher degrees held no first degree from Harvard; in 1900 about 50%; in 1899 the proportion was 44%.

The next Table (X) indicates the departments or fields of study in which lay the chief work of the candidates for the degrees of Master of Arts, Master of Science, Doctor of Philosophy, and Doctor of Science.

TABLE X. — DIVISIONS AND DEPARTMENTS IN WHICH RECOMMENDATIONS FOR THE HIGHER DEGREES WERE MADE IN 1901.

DIVISION.	DEPARTMENT.	DEGREES.			
		A.M.	S.M.	PH.D.	S.D.
I. Semitic Languages and History . . . . .		..	..	..	..
II. Ancient Languages :					
Indo-Iranian Languages . . . . .		..	..	..	..
The Classics (Greek, Latin) . . .	13	..	5	..	..
Total in Ancient Languages . . .	— 13	— ..	— 5	— ..	— ..
III. Modern Languages :					
English	14	..	1	..	..
Germanic Languages and Literatures	5	..	1	..	..
French, and other Romance Languages and Literatures	6	..	1	..	..
In more than one Department	3	..	..	..	..
Total in Modern Languages . . .	— 28	— ..	— 3	— ..	— ..
IV. History and Political Science :					
History and Government	24	..	2	..	..
Political Economy	9	..	2	..	..
Total in Hist. and Political Sci. . .	— 33	— ..	— 4	— ..	— ..

DIVISION.	DEPARTMENT.	DOCTORS.			
		A.M.	S.M.	Ph.D.	S.D.
V. Philosophy		18	..	5	..
[Education		8]			
VI. Fine Arts
VII. Music
VIII. Mathematics		1	..	2	..
IX. Engineering		1	1	..	..
X. Physics		2	1	3	..
XI. Chemistry		4	..	2	..
XII. Biology :					
Botany		1	2	..	..
Zoölogy		3	1	3	..
Total in Biology		— 4 —	3 —	3 —	..
XIII. Geology :					
Geology and Geography		4	2	1	..
Mineralogy and Petrography	1	..
Mining and Metallurgy	2	..	..
Total in Geology		— 4 —	4 —	2 —	..
XIV. American Archaeology and Ethnology . .		1	..	..	..
In more than one Division		7	..	..	..
Professional Students :					
Divinity School		5	..	..	..
Law School		2	..	..	..
Medical School		1	..	..	..
Total		124	9	29	..

The degree of Doctor of Philosophy was conferred upon the twenty-nine persons named below. With each name are given the special field in which the degree was taken, the candidate's academic history, the subject of his thesis, and his present occupation.

Philology.

WILLIAM WILSON BAKER.

Classical Philology.—A.B. *summa cum laude* 1898, A.M. 1899.—Res. Gr. Stud., 1898-1901.
Thesis: "Quid de scriptis suis aliorumque iudicarent Comici Græci."
Instructor in Latin in this University.

JOHN TAGGART CLARK.

Romance Philology.—A.B. *magna cum laude* 1898, A.M. 1899.—Res. Gr. Stud., 1898-1901.
Thesis: "An Examination of the Development of Medial Consonants in Italian, with Special Reference to the Question of Accent Influence."
Now studying Romance Philology in Paris, as Rogers Fellow.

CHARLES NELSON COLE.

Classical Philology.—A.B. (*Illinois Wesleyan Univ.*) 1894, A.M. (*Univ. of Illinois*) 1897, A.M. (*Harvard Univ.*) 1898.—Res. Gr. Stud., 1897-98.
Thesis: "De Vergilio Catulli Imitatore."
Instructor in Latin, Cornell University, Ithaca, N.Y.

HOMER JAMES EDMISTON.

Classical Philology.—A.B. (*Univ. of Nebraska*) 1892, A.M. (*Harvard Univ.*) 1899.—Res. Gr. Stud., 1898-1901.
Thesis: "Aristotelis Poeticam quibus modis scriptores ætate inferiores prave interpretati sint quæritur."
Associate in Latin, Bryn Mawr College, Bryn Mawr, Pa.

ROBERT HUNTINGTON FLETCHER.

English Philology.—A.B. (*Dartmouth Coll., N.H.*) 1896, A.M. (*Harvard Univ.*) 1898.—Res. Gr. Stud., 1897-98, 1899-1901.
Thesis: "The Arthurian Material in the Chronicles of Great Britain."
Now studying English Philology in Europe, as John Thornton Kirkland Fellow.

CARL NEWELL JACKSON.

Classical Philology.—A.B. *magna cum laude* 1898, A.M. 1899.—Res. Gr. Stud., 1898-1901.
Thesis: "Quas Partes Equi habebant in Religionibus Græcorum?"
Now studying Classical Philology in Berlin, as Rogers Fellow.

HENRY WASHINGTON PRESCOTT.

Classical Philology.—*A.B. summa cum laude* 1895, *A.M.* 1896.—*Res. Gr. Stud.*, 1895-96.
 Thesis: "De Daphnide Commentatio."
 Instructor in Latin, University of California, Berkeley, Cal.

JOHN CHRISTIAN RANSMEIER.

Germanic Philology.—*Ph.B. (Northwestern Univ., Ill.)* 1894, *A.M. (Harvard Univ.)* 1898.—*Res. Gr. Stud.*, 1897-1901.
 Thesis: "The Element of Revolt in the Thought of Johann Christoph Friedrich Hölderlin."
 Instructor in German, Williams College, Williamstown, Mass.

Philosophy.**MILTON EUGENE BLANCHARD.**

Logic and Metaphysics.—*Litt.B. (Univ. of California)* 1887, *A.B. (ibid.)* 1898, *A.M. (Harvard Univ.)* 1900.—*Res. Gr. Stud.*, 1899-1901.

Thesis: "The Negative Principle in Logic, Mathematics, and Ethics."
 Principal of the Hancock Grammar School, San Francisco, Cal.

LEWIS CLINTON CARSON.

Metaphysics and Epistemology.—*A.B. (Univ. of Michigan)* 1892, *A.B. (Harvard Univ.)* 1893, *A.M. (Univ. of Michigan)* 1899, *A.M. (Harvard Univ.)* 1900.—*Res. Gr. Stud.*, 1898-1901.

Thesis: "The Object of Knowledge: A Disertation in Philosophical Transcendence."
 Assistant in Philosophy in this University.

THOMAS HARVEY HAINES.

Psychology.—*S.B. (Haverford Coll., Pa.)* 1896, *A.M. (ibid.)* 1897, *A.M. (Harvard Univ.)* 1898.—*Res. Gr. Stud.*, 1897-1901.
 Thesis: "The Temporal Relations of Mental Processes: An Experimental Study of Objective and Subjective Simultaneity."
 Assistant Professor of Psychology, Ohio State University, Columbus, O.

EDWIN BISSELL HOLT.

Psychology.—*A.B. magna cum laude* 1896, *A.M. (Columbia Univ., N.Y.)* 1900.—*Res. Gr. Stud.*, 1897-98, 1900-01.
 Thesis: "The Motor Element in Vision."
 Instructor in Psychology in this University.

RAYMOND HERBERT STETSON.

Psychology.—*Ph.B. (Oberlin Coll., O.)* 1893, *A.M. (ibid.)* 1896.—*Res. Gr. Stud.*, 1899-1901.
 Thesis: "Rhythm and Rhyme."
 Instructor in Philosophy, Tabor College, Tabor, Ia.

History.**JONAS VILES.**

Constitutional History of England from 1559 to 1660.—*A.B. magna cum laude* 1896, *A.M.* 1897.—*Res. Gr. Stud.*, 1898-1901.
 Thesis: "The Privy Council of Elizabeth: A Partial Study of some of its Administrative Functions."
 Engaged in study and research in England.

ARTHUR HERBERT WILDE.

France in the Merovingian Period.—*A.B. (Boston Univ.)* 1887, *A.T.B. (ibid.)* 1891, *A.M. (Harvard Univ.)* 1899.—*Res. Gr. Stud.*, 1891 and 1898-1900.
 Thesis: "The Administration of the Schools of Gaul from the Fourth Century to the Reforms of Charlemagne."
 Assistant Professor of History, Northwestern University, Evanston, Ill.

Political Science.**DON CARLOS BARRETT.**

Money.—*Ph.B. (Earham Coll., Ind.)* 1889, *A.M. (ibid.)* 1893, *A.M. (Harvard Univ.)* 1896.—*Res. Gr. Stud.*, 1895-97.
 Thesis: "The Origin and Supposed Necessity of the United States Notes."
 Associate Professor of Political Science, Haverford College, Haverford, Pa.

HERBERT CAMP MARSHALL.

Economic History of the United States.—*A.B. (Ohio Wesleyan Univ.)* 1891, *A.B. (Harvard Univ.)* 1894, *A.M. (ibid.)* 1895.—*Res. Gr. Stud.*, 1894-98.
 Thesis: "The Currency and the Movement of Prices in the United States from 1880 to 1890."
 Third-year Law Student in this University.

Mathematics.**CHARLES WILLIAM MCGOWAN BLACK.**

Analysis.—*A.B. (Dickinson Coll., Pa.)* 1890, *A.M. (ibid.)* 1892, *A.M. (Harvard Univ.)* 1899.—*Res. Gr. Stud.*, 1898-1901.
 Thesis: "The Parametric Representation of the Neighborhood of a Singular Point of an Analytic Surface."
 Instructor in Mathematics, University of Oregon.

CHARLES NELSON HASKINS.

Lie's Theory of Continuous Groups.—*S.B. (Mass. Institute of Technology)* 1897, *S.M. (Harvard Univ.)* 1899, *A.M. (ibid.)* 1900.—*Res. Gr. Stud.*, 1898-1901.
 Thesis: "On the Invariants of Quadratic Differential Forms."
 Now studying Mathematics at Göttingen, as Harris Fellow.

Physics.**CHARLES HAMILTON AYRES, JR.**

Electricity.—*A.B. magna cum laude* 1898, *A.M.* 1899.—*Res. Gr. Stud.*, 1898-1901.
 Thesis: "Measurement of the Internal Resistance of Galvanic Cells."
 Instructor in Physics in this University.

GEORGE ASHLEY CAMPBELL.

Electricity.—*S.B. (Mass. Institute of Technology)* 1891, *A.B. (Harvard Univ.)* 1893, *A.M. (ibid.)* 1898.—*Res. Gr. Stud.*, 1891-93.
 Thesis: "On Loaded Lines in Telephonic Transmission."
 Electrical Engineer with the American Bell Telephone Co., Boston, Mass.

CLARENCE AUGUSTUS CHANT.

Electro-Optics.—*A.B. (Univ. of Toronto, Ont.)* 1890, *A.M. (ibid.)* 1900.—*Res. Gr. Stud.*, 1900-01.
 Thesis: "The Skin-effect in Electric Oscillators: with a Method of Determining Wave-lengths."
 Lecturer in Physics, University of Toronto.

Chemistry.**GEORGE WILLIAM HEIMROD.**

Physical Chemistry.—*A.B. summa cum laude* 1898, *A.M.* 1899.—*Res. Gr. Stud.*, 1898-1901.
 Thesis: "The Silver Voltmeter."
 Now studying Chemistry in Europe, as Parker Fellow.

BENJAMIN SHORES MERIGOLD.

Inorganic Chemistry.—A.B. 1896, A.M. 1897.

—Res. Gr. Stud., 1896-1900.

Thesis: "A Revision of the Atomic Weight of Uranium."

Instructor in Chemistry, Worcester Polytechnic Institute, Worcester, Mass.

Biology.**MAURICE ALPHEUS BIGELOW.**Zoölogy.—S.B. (*Ohio Wesleyan Univ.*) 1894,S.M. (*Northwestern Univ., Ill.*) 1896.—

Res. Gr. Stud., 1896-99.

Thesis: "The Early Development of Lepas: A Study of Cell-Lineage and Germ-Layers."

Instructor in Biology, Teachers' College, Columbia University, New York.

ROBERT WILLIAM HALL.Zoölogy.—P.H.B. (*Yale Univ., Conn.*) 1895,A.B. *cum laude* (*Harvard Univ.*) 1897,A.M. (*ibid.*) 1898.—Res. Gr. Stud., 1895-99.

Thesis: "The Development of the Mesonephros and the Müllerian Ducts in Amphibia."

Instructor in Biology, Sheffield Scientific School of Yale University.

REUBEN MYRON STRONG.Zoölogy.—A.B. (*Oberlin Coll., O.*) 1897,A.M. (*Harvard Univ.*) 1899.—Res. Gr.

Stud., 1898-1901.

Thesis: "The Development of Color in the Definitive Feather."

Teacher of Biology, Morgan Park Academy, Ill.

Geology.**ERNEST HOWE.**Petrographical Geology.—A.B. (*Yale Univ., Conn.*) 1898, A.M. (*Harvard Univ.*) 1899.—

Res. Gr. Stud., 1898-1901.

Thesis: "The Pre-Cambrian Intrusive Rocks of the Animas Canyon, Colorado."

Assistant Geologist in the U.S. Geological Survey.

ALFRED WILLIAM GUNNING WILSON.Physical Geology.—A.B. (*Univ. of Toronto, Ont.*) 1893, A.M. (*Harvard Univ.*) 1899.—

Res. Gr. Stud., 1898-1901.

Thesis: "Physical Geology of Central Ontario."

Recently Assistant in the Geological Survey of Canada; now continuing his geological studies in Europe.

Of these twenty-nine Doctors of Philosophy, twenty-one—or two-thirds of the whole number—are now engaged each in the pursuit of his profession. Except two—one an assistant in a scientific establishment of the United States Government, one engaged in business as an electrical engineer—all of the twenty-one are teachers either in colleges or universities (three are professors, fourteen are instructors or assistants), or in secondary institutions (two). Of these teachers only four are in the service of this University, as against twelve in the preceding year. All of the remaining eight Doctors of Philosophy are continuing their studies, one in a professional school of this University, and the remainder in Europe. Five of the latter are travelling fellows.

As the degree of Doctor of Philosophy at this University is based on the Harvard degree of Bachelor of Arts, or its equivalent, all the men recommended for the degree of Ph.D. held a degree in Arts, save one: he, though holding the degrees of Bachelor and Master of Science, had satisfied the requirements for the Harvard A.B. Twenty-six of the twenty-nine held Harvard degrees: one A.B. only, twelve A.B. and A.M., and thirteen A.M. only. All the candidates were Bachelors of Arts except six; four of these were Harvard A.M.'s; one was an A.M. elsewhere, and the sixth was Bachelor and Master of Science of other universities.

In the case of twelve candidates, six or more years had elapsed since the candidate had received the Harvard A.B. or had been admitted to equivalent standing. Of the remaining seventeen, five were Harvard A.B.'s (or its equivalent) of five years' standing, four

of four years' standing, and eight of three years' standing, and none of a shorter period.

The period of resident study varied between one year (two candidates), and four years (four candidates); seven candidates had spent two years and sixteen had spent three years in residence. The two candidates who had been in residence but one year had each pursued Graduate studies for one or more years at other colleges or universities (Columbia, Toronto, Northwestern), and nearly all of the candidates whose residence was for two years only had had similar studies elsewhere. The departments in which the degree was conferred after but a single year of resident study were — each with one candidate — Biology and Physics. The departments in which the degree was conferred after but two years of resident study were Classics (one), History (one), Philosophy (three), Physics and Political Science (one each). The departments where three years were found necessary by some candidates were History, Biology, and Chemistry (one each), Classics (four), English (two), Geology (two), Germanic Philology (one), Mathematics and Philosophy (two each). The four remaining candidates, who had each devoted four years to preparation for the degree, were in the departments of Biology, Chemistry, Philosophy, and Political Science, respectively.

The average period of resident study for the Doctor's degree is thus, as in the case of the candidates in the two previous years, a little less than three years. The statistics for 1901, if compared with those for 1900 and 1899, appear to indicate that the period of time found necessary for preparation for the degree is being slightly reduced, and that men are proceeding to the degree sooner after receiving the A.B. degree. This is a good tendency.

Tables XI and XII give the age of Graduate Students recommended for the higher degrees at Commencement, 1901.

TABLE XI. — AGE OF GRADUATE STUDENTS RECOMMENDED FOR THE DEGREES OF MASTER OF ARTS, MASTER OF SCIENCE, AND DOCTOR OF PHILOSOPHY: 1901.*

	20	21	22	23	24	25	26	27	28-34	35-39	40 or over	Total.
A.M.'s . .	1	3	9	10	12	8	6	6	25	7	4	91
S.M.'s . .	..	..	..	1	..	2	..	1	3	..	..	7
Ph.D.'s . .	..	..	..	..	1	3	5	3	14	3	..	29

* Men recommended for "as of" degrees are not included.

TABLE XII. — AGE OF GRADUATE STUDENTS RECOMMENDED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY: 1897-1901.

	22	23	24	25	26	27	28 or over
1897 . . . . .	. . .	. . .	3	1	4	2	15
1898	1	. . .	1	4	2	2	15
1899	1	4	2	3	2	1	8
1900 . . . . .	. . .	2	3	4	2	6	18
1901 . . . . .	. . .	. . .	1	3	5	3	17

The remarks made upon similar Tables in my last report hold true now. The average age of the normal Master of Arts (that is, a student who has continued his studies for the Master's degree immediately on receiving the Bachelor's degree or after an interval of only one year) is a little over twenty-four. The large group of men over twenty-seven who receive the Master's degree is not made up of laggards, but of persons who since receiving the Bachelor's degree have been actively engaged for the most part as teachers in different institutions, and have come to the University for a year or two of special study.

The Doctors of Philosophy are of course older. Clearly the age to which most candidates must postpone their examinations for the degree is too advanced. If the degree of Doctor of Philosophy is to be, not the luxury of a few with abundant leisure and opportunity for research and study, but at once the sign and prize, for the greater number of future teachers in American colleges and universities, of high scholarly character, of attainment and capacity for production, and of rigorous scientific training, it should be secured by the average candidate earlier than now. The normal age of Doctors of Philosophy, as for men generally who are to enter upon professional life at the fit time, is not far from twenty-five or twenty-six. The age is now much nearer thirty.

FELLOWSHIPS AND SCHOLARSHIPS.

The appointments to fellowships and scholarships for 1900-01 were made toward the close of the preceding academic year, chiefly in June, 1900. Similarly the appointments for the current year, 1901-02, were for the most part made within the academic year covered by the present report. The recommendations to fellowships and scholarships are made by the Faculty of Arts and Sciences on the nomination of its Committee on Fellowships and other Aids for

Graduate Students, and thus are a part of the business of that Faculty; but as the persons appointed are members of the Graduate School, information on this subject is always given in the reports of the Dean of the Graduate School.

Twenty-three* fellowships and sixty-one scholarships were held by students in the Graduate School in 1900-01. With the fellowships are included the John Harvard Fellowships, without stipend, — two in 1900-01, — and the Travelling Fellowship in Botany (for 1900-01 only). The Ozias Goodwin Memorial and one of the Whiting Fellowships were vacant. Thirteen of the fellowships, including the two John Harvard Fellowships, were held by Non-Resident Students who pursued their studies abroad, — in England (3), France (1), Germany (8), and Italy (1); one in the United States away from Cambridge. Nine of the fellowships and all the scholarships were held by Resident Students.

For 1901-02 the appointments have been made to twenty-four fellowships and forty-nine scholarships.

The names of the holders of fellowships for the two academic years 1900-01 and 1901-02, with statements as to the present occupation of each, follow. The fellowships are arranged in the order of their foundation.

1900-1901.**Harris Fellowship.****CAMPBELL BONNER.**

A.B. (*Vanderbilt Univ., Tenn.*) 1896, A.M. (*ibid.*) 1897, A.M. 1898, PH.D. (Classical Philology) 1900. — Res. Gr. Stud., 1897-1900; Non-Res. Stud., 1900-01. — University Scholar, 1897-98; George and Martha Derby Scholar, 1898-99; Morgan Fellow, 1899-1900. — Student of Classical Philology, in Germany.

Professor of Greek, Peabody Normal College of Vanderbilt University, Nashville, Tenn.

1901-1902.**CHARLES NELSON HASKINS.**

(See Morgan Fellowships, 1900-01.)

Rogers Fellowships.**ARTHUR CHARLES LEWIS BROWN.**

A.B. (*Hobart Coll., N.Y.*) 1893, A.B. 1894, A.M. 1895, PH.D. (English Philology) 1900. — Res. Gr. Stud., 1894-96 and 1898-1900; Non-Res. Stud., 1900-01. — Shattuck Scholar, 1894-95; Thayer Scholar, 1898-99; Morgan Fellow, 1899-1900. — Student of Comparative Literature, in Europe.

Instructor in English, University of Wisconsin, Madison, Wis.

JOHN TAGGART CLARK.

A.B. 1898, A.M. 1899, PH.D. (Romance Philology) 1901. — Res. Gr. Stud., 1898-1901. — University Scholar, 1898-99; Townsend Scholar, 1899-1900; Shattuck Scholar, 1900-01.

Student of Romance Languages, at Paris.

EDWARD KENNARD RAND.

A.B. 1894, A.M. 1895, PH.D. (*Univ. of Munich, Germany*) 1900. — Res. Div. Stud., 1894-96; Non-Res. Gr. Stud., 1899-1901. — John Harvard Fellow, 1899-1900. — Student of Late Latin, at Munich.

Instructor in Latin, at this University.

CARL NEWELL JACKSON.

A.B. 1898, A.M. 1899, PH.D. (Classical Philology) 1901. — Res. Gr. Stud., 1898-1901. — University Scholar, 1898-99; Townsend Scholar, 1899-1900; Shattuck Scholar, 1900-01.

Student of Classical Philology, at Berlin.

* In these lists and enumerations the Austin teaching fellowships are not included; they are of the nature of instructorships or assistantships and are therefore taken note of in another place.

1900-01.

Parker Fellowships.

GILBERT NEWTON LEWIS.

A.B. 1896, A.M. 1898, PH.D. (Chemistry) 1899.
— Res. Gr. Stud., 1897-99; Non-Res. Stud.,
1900-01. — George and Martha Derby
Scholar, 1897-99; Toppan Scholar, 1898-
99. — Instructor in Chemistry, 1899-1900. —
Student of Chemistry, at Leipzig.
Instructor in Chemistry, at this University.

EARLE RAYMOND HEDRICK.

Reappointed.

A.B. (*Univ. of Michigan*) 1896, A.M. 1898,
PH.D. (*Univ. of Göttingen, Germany*)
1901. — Res. Gr. Stud., 1897-99; Non-Res.
Stud., 1899-1900. — Shattuck Scholar, 1897-
98; Morgan Fellow, 1898-99. — Student of
Mathematics, at Göttingen.
Instructor in Mathematics, Sheffield Scien-
tific School, Yale University.

WILLIAM BENNETT MUNRO.

A.M. (*Queen's Univ., Ont.*) 1896, LL.B. (*ibid.*)
1897, A.M. 1899, PH.D. (Political Science)
1900. — Res. Gr. Stud., 1898-1900; Non-
Res. Stud., 1900-01. — University Scholar,
1898-99; Ozias Goodwin Memorial Fellow,
1899-1900. — Student of History and Polit-
ical Science, at Berlin.
Instructor in History, Williams College.

John Thornton Kirkland Fellowship.

JESSE MORE GREENMAN.

Reappointed.

S.B. (*Univ. of Pennsylvania*) 1893, S.M. 1899,
PH.D. (*Univ. of Berlin, Germany*) 1901. —
Res. Gr. Stud., 1898-99; Non-Res. Stud.,
1899-1901. — Assistant in the Gray Herbar-
ium, 1894-99. — Student of Botany, in
Berlin.

James Walker Fellowship.

EDWARD PARRISH CARR.

A.B. (*Univ. of North Carolina*) 1896, A.B.
1897, A.M. 1898. — Res. Gr. Stud., 1897-
1900; Non-Res. Stud., 1900-01. — Assistant
in Philosophy, 1898-99. — Student of Philo-
sophy, in Berlin.

Morgan Fellowships (discontinued).

CHARLES NELSON HASKINS.

S.B. (*Mass. Inst. of Technology*) 1897, S.M.
1899, A.M. 1900, PH.D. (Mathematics) 1901.
— Res. Gr. Stud., 1898-1901. — Shattuck
Scholar, 1898-1900. — Student of Mathe-
matics, at this University.
Continuing his studies at Göttingen, as Harris
Fellow.

FRANCIS SAMUEL PHILBRICK.

S.B. (*Univ. of Nebraska*) 1897, A.M. (*ibid.*)
1899. — Res. Gr. Stud., 1899-1901. — Uni-
versity Scholar, 1899-1900. — Student of
History, at this University.
Now continuing his studies at this Univer-
sity, as Edward Austin Fellow.

JOHN CHRISTIAN RANNEMEIER.

PH.B. (*Northwestern Univ., Ill.*) 1894, A.M.
1898, PH.D. (Germanic Philology) 1901. —
Res. Gr. Stud., 1897-1901. — Thayer Scholar,
1898-99; Shattuck Scholar, 1899-1900. —
Assistant in German, 1899-1900. — Student
of German, at this University.
Instructor in German, Williams College.

WILLIAM ALBERT WILLARD.

PH.B. (*Iowa Coll.*) 1895, A.M. (*Tufts Coll.*)
1898, A.M. 1899. — Res. Gr. Stud., 1898-
1901. — Leverett Saltonstall Scholar, 1898-
99. — Assistant in Zoölogy, 1899-1900. —
Student of Zoölogy, at this University.
Acting Professor of Biology, Iowa College,
Grinnell, Ia.

1901-02.

GEORGE HUBBARD BLAKESLEE.

A.B. (*Wesleyan Univ., Conn.*) 1893, A.M.
(*ibid.*) 1897, A.M. 1900. — Res. Gr. Stud.,
1898-1901. — Townsend Scholar, 1899-1900.
Student of History, at Berlin.

GEORGE WILLIAM HEIMROD.

A.B. 1898, A.M. 1899, PH.D. (Chemistry) 1901.
— Res. Gr. Stud., 1898-1901. — Thayer
Scholar, 1899-1900. — Assistant in Chem-
istry, 1898-99; Austin Teaching Fellow in
Chemistry, 1900-01.
Student of Chemistry, in Europe.

CHARLES WILLIAM PRENTISS.

A.B. (*Middlebury Coll., Vt.*) 1896, A.M. (*ibid.*)
1897, A.M. 1898, PH.D. (Biology) 1900. —
Res. Gr. Stud., 1897-1900. — Townsend
Scholar, 1897-98. — Assistant in Zoölogy,
1898-1900; Instructor in Anatomy, Har-
vard Veterinary School, 1900-01.
Student of Zoölogy, in Europe.

ROBERT HUNTINGTON FLETCHER.

A.B. (*Dartmouth Coll., N.H.*) 1896, A.M. 1898,
PH.D. (English Philology) 1901. — Res.
Gr. Stud., 1897-98 and 1899-1901. — Town-
send Scholar, 1898-1900; Christopher M.
Weld Scholar, 1900-01.
Student of English Philology, in Europe.

KNIGHT DUNLAP.

PH.B. (*Univ. of California*) 1899, LITT.M.
(*ibid.*) 1900. — Res. Gr. Stud., 1900-01.
Student of Philosophy, at this University.

1900-01.

1901-02.

John Tyndall Scholarship.**GEORGE WASHINGTON PIERCE.***Reappointed.*

B.S. (*Univ. of Texas*) 1893, A.M. (*ibid.*) 1894, A.M. 1899, Ph.D. (Physics) 1900. — Res. Gr. Stud., Feb., 1898-1900; Non-Res. Stud., 1900-01. — Student of Physics, at Leipzig. Assistant in Physics, at this University.

EDWIN PLIMPTON ADAMS.

(See Whiting Fellowships, 1900-01.)

Robert Treat Paine Fellowship.**FREDERICK ALEXANDER BUSHÉE.***Reappointed.*

LITT.B. (*Dartmouth Coll., N.H.*) 1894, A.M. 1898. — Res. Gr. Stud., 1897-1900. — Non-Res. Stud., 1900-01. — University Scholar, 1897-98; Townsend Scholar, 1898-99. — Student of Economics, in Paris. Assistant in Economics, at this University.

ANDREW LIGHT HORST.

A.B. 1900, A.M. (*Columbia Univ., N.Y.*) 1901. Student of Social Science, at this University.

Henry Lee Memorial Fellowship.**ROBERT MORRIS.**

A.B. (*Univ. of Nashville, Tenn.*) 1897, A.B. (*West Virginia Univ.*) 1899, LL.B. (*ibid.*) 1899, A.M. (*ibid.*) 1900. — Res. Gr. Stud., 1900-01. — Student of Economics, at this University.

Now continuing his studies at this University, as Henry Lee Memorial Fellow.

ROBERT MORRIS.*Reappointed.***Ozias Goodwin Memorial Fellowship.***No appointment.***JAMES AUGUSTUS GEORGE.**

A.B. (*Univ. of New Brunswick*) 1896, A.B. 1899, A.M. 1901. — Res. Gr. Stud., 1899-1901. — University Scholar, 1900-01. — Assistant in Government, 1899-1900. Student of History and Government, at this University.

Henry Bromfield Rogers Memorial Fellowship.**GEORGE JOHN BLEWETT.**

A.B. (*Univ. of Toronto, Ont.*) 1897, Ph.D. (Philosophy) 1900. — Res. Gr. Stud., 1899-1900; Non-Res. Stud., 1900-01. — Toppan Scholar, 1899-1900. — Student of Ethics in its Relations to Jurisprudence, at Oxford. Professor of Philosophy, Wesley College, Winnipeg, Manitoba.

WILLIAM ERNEST HOCKING.

A.B. 1901. Student of Philosophy, at this University.

Hemenway Fellowship.**WILLIAM CURTIS FARABEE.**

A.B. (*Waynesburg Coll., Pa.*) 1894, A.M. (*ibid.*) 1895, A.M. 1900. — Res. Gr. Stud., 1899-1901. — Student of American Archaeology and Ethnology, at this University. Austin Teaching Fellow in Anthropology and Third-year Graduate Student, in this University.

HENRY MINOR HUXLEY.

A.B. 1899. Student of Anthropology, at this University.

1900-01.

1901-02.

John Harvard Fellowships.

HARRY NELSON GAY.

A.B. (*Amherst Coll.*) 1891, A.M. 1896. — Res. Gr. Stud., 1894-96 and 1896-97; Non-Res. Stud., 1896-98 and 1900-01. — Student of History, in Rome.
Continuing his studies in Italy, as John Harvard Fellow.

HARRY NELSON GAY.

Reappointed.

ROGER BIGELOW MERRIMAN.

A.B. 1896, A.M. 1897, LITT.B. (*Univ. of Oxford, England*) 1899. — Res. Gr. Stud., 1896-97 and 1899-1900; Non-Res. Stud., 1900-01. — Assistant in History, 1899-1900. — Student of History, in Europe.
Continuing his studies in Europe, as John Harvard Fellow.

ROGER BIGELOW MERRIMAN.

Reappointed.

Whiting Fellowships.

EDWIN PLIMPTON ADAMS.

Reappointed.

S.B. (*Beloit Coll., Wis.*) 1899, S.M. 1901. — Res. Gr. Stud., 1899-1901. — Student of Physics and Mathematics, at this University.

Now continuing his studies in Berlin, as John Tyndall Scholar.

GUSTAVUS ADOLPHUS ANDEREGG.

S.B. (*Oberlin Coll., O.*) 1899, A.B. 1900. — Res. Gr. Stud., 1900-01. — Assistant in Physics, 1900-01.

Student of Physics, at this University.

JOHN EMERSON BURBANK.

Resigned.

One vacancy.

CHARLES MONRO PASER.

S.B. (*Dalhousie Univ., N.S.*) 1900, A.B. 1901.
Student of Physics, at this University.

JOSEPH CLEAVELAND PEARSON.

A.B. (*Bowdoin Coll., Me.*) 1900.
Student of Physics, at this University.

South End House Fellowship (special for 1900-02).

ROSWELL FOULK PHELPS.

S.B. (*Amherst Coll.*) 1899, A.B. 1900. — Res. Gr. Stud., 1900-01. — Student of Sociology at this University.

Now continuing his studies at this University, as South End House Fellow.

ROSWELL FOULK PHELPS.

Reappointed.

Travelling Fellowship in Botany (special for 1900-01).

CARLETON ESTEY PRESTON.

A.B. 1899, A.M. 1900. — Res. Gr. Stud., 1899-1900; Non-Res. Stud., 1900-01. — Student of Botany, in Arizona.

Assistant in Botany, Yale Forest School.

Charles Eliot Norton Fellowship (new).

OLIVER SAMUEL TONKS.

A.B. 1898, A.M. 1899. — Res. Gr. Stud., 1898-1901. — University Scholar, 1899-1901.
Student of Classical Archaeology, in Athens.

1900-01.

1901-02.

Edward Austin Fellowships (new).

DONALD CAMERON.

A.B. (*Univ. of Texas*) 1896, A.M. (*ibid.*) 1898,
A.M. 1900. — Res. Gr. Stud., 1899-1901. —
Townsend Scholar, 1900-01.
Student of Classical Philology, at this Uni-
versity.

JOSEPH HORACE FAULL.

A.B. (*Univ. of Toronto, Ont.*) 1896.
Student of Botany, at this University.

PRENTISS CHENEY HOYT.

A.B. (*Middlebury Coll., Vt.*) 1890, A.M. (*ibid.*)
1892, A.M. 1899. — Res. Gr. Stud., 1898-
1901. — Shattuck Scholar, 1900-01.
Student of English, at this University.

FRANCIS SAMUEL PHILBRICK.

(See Morgan Fellowships, 1900-01.)

Of the twenty-three holders of fellowships in 1900-01 sixteen are now engaged in teaching; all of them in colleges (three being professors) or universities (including five here). The remaining seven of the twenty-three are continuing their studies, four of them abroad, all being holders of travelling fellowships from this University; three are resident students at this University. Seven of the fellowship holders of 1900-01 hold similar appointments for the present year (1901-02).

The holders of fellowships consist of two classes of students: those that have ordinarily received a higher degree (Ph.D. or S.D.) and are continuing studies and researches of a highly specialized nature for a year or two before taking up active professional work, and those whom the stipend of the fellowships enables to carry on studies normally for a higher degree, which they expect to receive either at this University or at some other university, American or foreign. Thus of the twenty-three fellows in 1900-01 seven were already Ph.D.'s when they became fellows; four received the Doctor's degree at the close of the year of their fellowship (two of them at this University, and two in Germany). Of the remaining twelve, three only had no Harvard degree (two A.M.'s and one S.B. and S.M.); one was a Harvard A.B. only, and the remainder, eight, were all Harvard A.M.'s. Several of these men are known to have the Doctor's degree in prospect.

FELLOWSHIPS AND SCHOLARSHIPS: APPLICATIONS AND APPOINTMENTS.

The following Table (XIII) gives the usual statistics relative to the applications and appointments for the three successive years 1899-1900, 1900-01, 1901-02:—

TABLE XIII.—FELLOWSHIPS AND SCHOLARSHIPS (1898-1900).

1. *Applications and Appointments.*

	1899-1900.	1900-01.	1901-02.
Spring applicants for reappointment or promotion	48	51	42
Spring applicants for a first appointment . .	230	256	225
Later applicants	76 354	47 354	56 323
Appointed to fellowships	20	19	21*
Appointed to scholarships	58	57	46
Appointed instructors or assistants	21 99	27 103	13 80
Deduct for repetitions	1	1	0
	98	102	80
Entered or continued in the Graduate School without receiving any of the above-named appointments	64	66	68
Entered undergraduate classes of Harvard College	11	3	3
Entered other departments of the University	3 78	4 73	4 75
Applicants who were at the University in the year following their applications . .	176	175	155
Applicants not at the University in that year	178	179	168
	354	354	323

* These figures do not include the two John Harvard fellowships, the Hemenway fellowship, the Charles Eliot Norton fellowship, or the scholarships of the Harvard Clubs of Chicago, St. Louis, and San Francisco. Two Austin Scholarships are vacant. One extra Thayer Scholarship has been assigned, to take the place of the one left vacant in 1900-01.

2. *Classification of Applicants and Appointees.*

	1899-1900.		1900-01.		1901-02.	
	Applicants.	Appointees.	Applicants.	Appointees.	Applicants.	Appointees.
Students of Philology	132	25	128	27	112	19
Students of Philosophy, History, or Political Science	119	24	123	23	97	21
Students of Mathematics, Physics, or Chemistry	62	17	61	15	67	16
Students of Natural History	37	11	38	11	44	11
Students of other branches, or unclassified	4	1	4	0	3	0
	354	78	354	76	323	67
Students in the Graduate School	111	51	110	49	109	33
Students in Harvard College	39	2	43	6	28	6
Students in other Departments of the University	7	1	3	1	4	0
Former students in some Department of the University	28	3	38	7	16	4
Persons never previously members of the University	169	21	160	13	166	24
	354	78	354	76	323	67
Harvard Bachelors of Arts or Science, not previously graduated elsewhere	37	15	31	8	29	10
Harvard Bachelors of Arts or Science, previously graduated elsewhere	15	5	24	6	17	6
Graduates of other institutions, not Harvard Bachelors of Arts or Science	244	54	237	59	235	49
Undergraduates of Harvard College, not already graduated elsewhere	26	2	28	3	19	2
Undergraduates of other institutions and other non-graduates	32	2	34	0	23	0
	354	78	354	76	323	67

This Table (XIII) suggests many comments. The most striking thing is the drop in the number of applicants for 1901-02 — as compared with previous years — by about thirty, the falling-off being almost wholly in Harvard Bachelors of Arts. Perhaps this was due, among other causes, to the reduction in the number of University scholarships (from twenty to ten), a reduction that would be generally known to Harvard men. It may be remarked that this falling-off in number of applicants coincides with that in the number of students

in the School in 1901-02. As usual, the applicants in the languages and in the philosophical and historical sciences outnumber those in the other sciences by two to one. Of the applicants in the languages less than one in six was successful; in philosophy, history, and political sciences, more than one in five; in mathematics, physics, and chemistry, and in natural history, about one in four. Of the applicants who had previously been members of the School, about one-third received an appointment (against one-half in the previous year). Of those who had never been in the University, about one in seven was successful. Among applicants who were Harvard Bachelors, over one in three was successful, while of the very large number of those that held no Bachelor's degree from Harvard, one in five received an appointment. It appears from these proportions, which vary only slightly from year to year, that it is a distinct advantage to the applicant to be a holder of a Harvard Bachelor's degree or to have spent a period of time in study at the University. At the same time, the large number of appointments of men who do not hold the first degree from Harvard (forty-nine appointments out of two hundred and thirty-five applicants in 1901) shows that the graduates of other colleges are by no means discriminated against.

In the selection of appointees great care is exercised. The applications, with credentials and other evidences of merit, are first sent to the committees of the departments under which the applicants are to study. These committees severally return their recommendations, each arranging its candidates in the order of preference. The Committee on Fellowships and other Aids for Graduate Students chooses, mainly on the basis of the opinions of departmental committees, the persons finally to be recommended, selecting and distributing these, as equitably as may be, among the departments, and having reference therein to the merit of individual applicants rather than to the number of applicants or students in the several departments. The Committee's recommendations are presented to the Faculty; this body, with carefully digested evidence before it, in print, with regard to all applicants, ordinarily adopts the recommendations and transmits the list to the Corporation, which then makes the actual appointments.

INSTRUCTORSHIPS AND ASSISTANTSHIPS.

A small proportion of the members of the Graduate School serve the University as instructors and assistants by regular appointment of the Corporation. These men find time both to do a certain amount of advanced work, often of research, and to give instruction or to aid other teachers in their instruction. The amount of their work in the School varies from a half-course to what is technically known as full work (four courses). In 1900-01 six members of the School were appointed to instructorships, eleven to Austin teaching fellowships, and thirty to assistantships. In the current year there are, of the members of the School, seven instructors and thirty assistants under appointment of the Corporation. Besides these assistants, there are fifteen Austin teaching fellows, thirteen of whom are members of the Graduate School. Our Table shows that many of the annual appointments to these positions are made from among applicants for fellowships and scholarships in the Graduate School.

Out of the three hundred and fifty-three members of the School in 1900-01, one hundred and thirty, or nearly thirty-seven per cent., were holders of instructorships, assistantships, fellowships with stipends, or scholarships. Furthermore, other members of the School, as well as some of the foregoing, held proctorships and other like appointments by which their expenses in the School were reduced.

No strictly new scholarships or fellowships were founded in 1900-01. The four Morgan Fellowships were withdrawn, being replaced by four Edward Austin Fellowships which are awarded upon similar conditions. The stipend of the Christopher M. Weld Scholarship was raised from three hundred to four hundred dollars.

In February, 1900, the Association of American Universities held its first annual conference at Chicago, and, after informal discussion of several matters, adopted a constitution, which declares that the Association "is founded for the purpose of considering matters of common interest relating to graduate study . . . but no act of the Association shall be held to control the policy or line of action of any institution belonging to it." The Association consists of fifteen American universities — California, the Catholic University of America, Chicago, Clark, Columbia, Cornell, Harvard, Johns Hopkins, Leland Stanford Jr., Michigan, Pennsylvania, Princeton, Wisconsin, and Yale — each of which is represented by one or more delegates.

The second annual conference was held at Chicago in February, 1901, and Professor Briggs was present and, as the delegate of Harvard University, presided. The topics specially discussed at this conference, which had been announced in advance, were:—

- (1) Migration of Graduate Students.
- (2) Type of Examination for the Doctor's Degree.
- (3) To What Extent should a Candidate for the Doctor's Degree be Required to Show a Knowledge of Subjects not immediately Connected with his Own Subject?
- (4) Fellowships.

The conference also had before it a communication from the Federation of Graduate Clubs, in which among other recommendations was one that three years should be the minimum time of graduate study for the doctorate degree, and another that all universities should adopt a rule for the publication of all theses accepted from candidates for the degree of Doctor of Philosophy.

Full reports of the discussions, with abstracts of the papers with which the discussion of each topic was opened, have been published in a separate pamphlet.

At the request of Professor Briggs, and after consultation with the Administrative Board, I wrote for his use at the conference a letter in which were given very briefly and informally the views of the Board, as I understood them, on the topics proposed for discussion. A few extracts from this letter are perhaps not out of place here.

"The Migration of Graduate Students.—We think this an excellent practice, but we feel it necessary to insist that students who come to us from other graduate departments should bring a satisfactory record from their principal instructors of the work done by them if such work is to count in any way for our higher degrees. We believe that this migration is useful not only to the men themselves, but in its effects,—in developing the spirit of coöperation between different universities.

"Type [understood to be 'Topics'] of Examination for the Doctor's Degree.—The usage at this University in the different Departments is so various that it is impossible to lay down any details. We believe here that the Doctor should be master of some great field of learning, and that his examination for the Doctor's degree should be almost wholly within that field. We are not in favor of allowing the candidate for the Doctor's degree to offer for the examination subjects that are not closely related to his field of learning.—Within his field there are subjects enough: and the combinations will be different for different men.

"To What Extent should a Candidate for the Doctor's Degree be Required to Show a Knowledge of Subjects not immediately Connected with

his Own Subject? — Our views upon this topic have been partly indicated already. As all candidates for the Doctor's degree must have the Harvard A.B. or its equivalent, and as this is based upon a very broad substratum of liberal knowledge, we think it not necessary to require of candidates for the Doctor's degree knowledge of subjects not intimately connected with their own subjects.

“ *Fellowships.* — We think that the name ‘fellowship’ should be limited to appointments that carry with them a considerable sum of money, not less than \$400 a year. There is at this University a difference of opinion as to the nature of fellowships. Some people think that fellowships, like scholarships, should be aids only and should not substantially support men at the University. Others, on the other hand, think that fellowships are of the nature of salaries, and that the stipend should be a generous one. It would be preposterous to expect teachers to be satisfied with very low salaries and to require them to eke out their means by outside work. The holder of a fellowship, who gives his time to research and the advancement of learning, to us seems to be in the same category with a college professor. The efficiency of the work of the Fellows is greatly enhanced if they are not vexed by anxieties about their support. Of course such fellowships as I here have in mind are to be given only to a few men — to men of extraordinary promise, men who are sure to receive appointments in good colleges and universities whenever vacancies are likely to occur.”

For many years the proposition that the dissertations of Doctors of Philosophy and Science should be printed and distributed has been discussed by the Administrative Board. A recommendation on this subject from the Board to the Faculty was acted upon in November, 1900, and rejected by a vote of thirty to twenty-five. In its final form this recommendation provided that the regulations now in force should remain in force, but that in addition the following should be adopted : —

1. Each successful candidate for the degree of Doctor of Philosophy or Doctor of Science is required to deposit in the Harvard College Library fifty printed copies of his thesis (with *vita*) within one year after receiving the degree, unless longer time is granted by special vote of the Division in which the degree is obtained.
2. By special vote of the Division concerned the printed copies thus deposited may be a revised form of the thesis, and, in exceptional cases, instead of the whole thesis, an abstract or essential part of it, and illustrations or plates may be omitted. In all such cases the material for publication must be approved by the Division concerned, and if less than the whole is printed, or if a revised copy of the whole thesis is printed, the fact must be stated in the printed copies.

Among the larger universities Harvard University now stands entirely alone in not requiring the publication of the dissertations of Doctors. To be sure, the larger proportion of Harvard

dissertations are now published in some form, either in the official publications of the several departments, by learned societies, in periodicals, or by private venture; but numbers of them never see print. The valuable results of months or even of years of careful investigation, valuable not only as the indications of high scholarship and power in research, but as contributions to learning or science, are practically inaccessible to scholars. The main objection that has been made to the requirement of publication is the pecuniary burden it would lay upon many candidates. A publication fund for the assistance of authors of theses which but for such assistance would hardly be published would serve a very useful purpose. Such a fund once assured, the Faculty could hardly hesitate to enact a regulation which, salutary in itself, is in force at every other important university in America and in Europe.

On an earlier page certain statistics are given about students in the Graduate School who have already pursued graduate studies elsewhere. These statistics are interesting and important from several points of view. It is apparent, especially if we include with these men those who have elsewhere carried on higher studies as undergraduates, that the migration of advanced students from university to university, or at least to this University, is in full tide. These statistics show that advanced or graduate instruction is now provided in a large and constantly increasing number of American colleges; they also show that at the present time many men who have had this instruction wish to supplement it by work done at Harvard. Presumably this most advanced and very highly specialized work is, in the opinion of the migrants, done to better advantage at Harvard than elsewhere; this might safely be affirmed at least of the subjects that are here pursued by the larger number of these migrating students. But these conditions may not long continue. With the rapid and almost unprecedented enlargement and enrichment of the opportunities for graduate instruction in various other parts of the country, the relative preëminence and attractiveness of Harvard may cease. They assuredly will cease, unless the standards of instruction—both in range and quality—and of the requirements for the degrees are maintained at a high level, and unless, among other things, the way is made easy for men of ability and promise to come to the Graduate School and to remain in it, men for the most part of limited means but of limitless ambition.

The formal opening meeting of the School for the current year (1901-02) was held on Thursday evening, October 3, in the

Faculty Room. The chief address was delivered by Professor E. C. Pickering, on recent work in photographic astronomy and on the call made at the present time, by reason of the elaborate organization of scientific research, for men of varied scientific training and equipment. Short addresses were made by Professor Peabody, Dean of the Divinity School, and Mr. P. C. Hoyt, President of the Graduate Club.

JOHN HENRY WRIGHT, *Dean.*

DECEMBER 4, 1901.

THE DIVINITY SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,—I have the honor to present the following statement concerning the Divinity School for the year 1900–01. During the whole academic year, with the exception of the first weeks, the School was without a Dean.

The changes in the Faculty of the School during this year were without precedent in number and importance. The profoundly lamented death of Dean Everett not only deprived the School of his administrative leadership, but left vacant throughout the year the Chair of Systematic Theology. The retirement of Professor Thayer from the active service of the School, and the acceptance by Assistant Professor Platner of a Professorship in Andover Theological Seminary, left our Staff greatly reduced and involved much re-arrangement of our courses and departments. Professor Fenn was appointed in March to the Bussey Professorship of Theology, but did not undertake his duties until September, 1901. When we add to these changes in our Faculty the radical modifications which have already occurred : first, the raising of the tuition fee of the School to the level of that in other Cambridge Departments of the University ; second, as a result of a demand in which the Divinity School has taken the lead, the requirement of the degree of Bachelor of Arts as essential for candidacy for the professional degree ; and third, the opening of non-professional courses in the University, approved by the Faculty, as appropriate for the degree of Bachelor of Divinity ; we must recognize that a transformation of method has been made in the Divinity School, which is quite unparalleled in its history, and perhaps in the history of theological education.

The effect of these successive changes is indicated by the following figures, which cover twenty-five years. The requirement of the degree of Bachelor of Arts was first made in the year 1886–87 ; and the number of students soon dropped from 25 to 16. Recovery of numbers followed, accompanied by improvement of quality, until the enrolment rose to 50 in the year 1894–95. In 1897–98, the increase of fee at once reduced the attendance ; and in two years an average, for a term of seven years, of 42 was reduced to 26. It now appears probable that the full effect of these successive changes has been felt, and the year 1901–02 begins with another considerable increase of numbers.

Academic Year.	Number of Students.	Academic Year.	Number of Students.
1876-77	23	1889-90	35
1877-78	21	1890-91	41
1878-79	23	1891-92	39
1879-80	23	1892-93	41
1880-81	23	1893-94	47
1881-82	29	1894-95	50
1882-83	27	1895-96	41
1883-84	21	1896-97	37
1884-85	26	1897-98	40
1885-86	25	1898-99	28
1886-87	20	1899-1900	28
1887-88	16	1900-01	28
1888-89	26		

The twenty-eight students enrolled in the year 1900-01 were distributed as follows:—

Resident Graduates	9
Senior Class	2
Middle Class	5
Junior Class	8
Special Students	4

Eighteen colleges were represented as follows:—

Antioch College	1	McGill University	2
Bates College	1	Miami University	1
Bowdoin College	1	University of Missouri	1
Brown University	2	University of Nebraska	1
Chinzei Gakkwan	1	Ohio State University	1
Colby University	1	Tufts College	1
Dalhousie College	1	Union College	1
Franklin College	1		28
Giessen University	1	Counted more than once	4
Harvard University	9		24
University of Iowa	1		

Eight theological seminaries were represented as follows:—

Cobb Divinity School	1	Presbyterian College, Montreal	1
Halifax Theological College	1	Union Theological Seminary	1
Harvard University	1		10
Meadville Theological School	3	Counted more than once	1
New Church Theol. Sch., Cam.	1		9
Oberlin College	1		

The degree of S.T.B. was taken by two members of the School, that of A.M. by five.

The address at the opening of the year was by Professor Emerton. His subject was Present Aspects of Historical Theology.

SUMMER SCHOOL — STUDENTS FROM OTHER SCHOOLS. 151

A Summer School was held, as in the two preceding years, from July 2 to July 19. The three sessions of the School gave the following record of attendance :—

	Men.	Women.	Total.
1899	96	9	105
1900	52	2	54
1901	84	5	89

The distribution by denominations, in the case of ministers attending in the three years, was as follows :—

	Orthodox Congregational.	Unitarian Congregational.	Episcopalian.	Universalist.	Baptist.	Presbyterian.	Disciples.	Methodist.	Free Baptist.	Lutheran.
1899	27	17	16	14	5	3	—	—	—	—
1900	17	6	3	14	6	—	3	3	—	—
1901	28	12	11	14	5	2	—	10	1	1

In 1899 the Committee of the Board of Overseers to visit the Divinity School, in the course of their Report, remarked : “Students, for some years to come, are likely to be few, though they are likely also to be of good quality. The best that can be looked for is that a certain number of mature students will seek the broader training after their course in another school is ended.” The resort to the School then anticipated seems now likely to occur. The number of Graduate Students makes each year a considerable proportion of the whole enrolment, and will probably increase as the School associates itself more closely with the larger movements of University life.

The following table gives the number of graduates of other theological schools registered in the Harvard Divinity School for each of the last three years, and the percentage of the total registration which that number constituted :—

1898-1899	10	38.5
1899-1900	11	39.3
1900-1901	9	32.1

The following is a list of the courses of the School, and after each course given last year is a statement of the number of students taking it from the Divinity School, from the Graduate School, and from the College. It will be observed that the Faculty of the Divinity

School contribute largely to the instruction offered both in the College and in the Graduate School. On the other hand, nine elections of College courses were made by Divinity students. There is appended to the list of regular courses a list of the lectures of the Summer School. Almost all of the students enrolled in the Summer School attended all its courses.

COURSES OF INSTRUCTION.

OLD TESTAMENT.

1. Professor LYON. — Hebrew. — Davidson's Introductory Hebrew Grammar. Explanation of parts of Genesis and of the Psalm-book.
2 Div., 1 Gr., 4 Col.
2. Professor TOY. — Hebrew (second course). — Syntax. — Interpretation of parts of the Prophets and Poetical Books. Text-criticism. 1 Div., 4 Col.
- 3¹ *hf.* Professor LYON. — Jewish Aramaic. Kautzsch's *Biblisch-Aramäische Grammatik*. — Interpretation of parts of Ezra, Daniel, and the Targums. *Half-course*.
4. Professor LYON. — History of Israel, political and social, till the capture of Jerusalem by the Romans. Text-books, lectures, and theses.
4 Div., 52 Col., 6 Sci.
5. Professor TOY. — History of pre-Christian Hebrew Literature.
5 Div., 1 Col.
6. Professor TOY. — History of the Hebrew Religion, with comparison of other Semitic religions.
2 Div., 2 Gr.
7. Professor LYON. — Assyrian. Lyon's *Assyrian Manual*. Delitzsch's *Assyrian Grammar*. Abel and Winckler's *Keilschrifttexte*.
8. Professor LYON. — Assyrian (second course). — Delitzsch's *Assyrian Grammar*. Delitzsch's *Assyrische Lesestücke*. The Chaldean Epic. Letters and Commercial Documents.
1 Div.
20. Research courses. The instructors arrange and supervise for any properly prepared student a line of special study on such topic as may be agreed on.
1 Div.

NEW TESTAMENT.

- 1¹ *hf.* Professor THAYER. — New Testament Times. — The political, social, moral, and religious condition of the world when Christ appeared. *Half-course*.
6 Div.
- 2² *hf.* Professor THAYER. — New Testament Introduction. — The origin, contents, and history of the New Testament writings, together with the formation of the Canon. *Half-course*.
6 Div.
- 3¹ *hf.* Asst. Professor ROPES. — Preparatory Course. — General topics (including the characteristics of New Testament Greek and the elements of textual criticism); exegetical work begun. *Half-course*.
4 Div.

- 4th *hf.* Asst. Professor ROPES. — The Teaching of Jesus as contained in the Synoptic Gospels. *Half-course.* 5 Div.
- 5th *hf.* Asst. Professor ROPES. — The Synoptic Gospels, with special reference to the Synoptic Problem. *Half-course.*
6. Professor THAYER. — The Gospel and Epistles of John.
7. Asst. Professor ROPES. — The Apostolic Age. — Study of the Acts of the Apostles. 3 Div.
8. Professor THAYER. — Outline lectures on the life of Paul. — Study of the Four Great Epistles.
9. Asst. Professor ROPES. — The Minor Pauline Epistles. 1 Div.
- 10 *hf.* Asst. Professor ROPES. — The Pastoral Epistles. *Half-course.*
11. Professor THAYER. — The Epistle to the Hebrews.
- 12 *hf.* Asst. Professor ROPES. — The Catholic Epistles. *Half-course.*
13. Asst. Professor ROPES. — The Apocalyptic literature, with special study of the Revelation of John.
14. Professor THAYER. — Biblical Interpretation. — Its history, methods, principles, and their application in the study of difficult and debated New Testament passages. 1 Div.
15. Professor THAYER. — Biblical Theology of the New Testament, centring upon the doctrines of sin and redemption.
- 16 *hf.* Professor THAYER. — History of the English Bible, with a detailed study of the Revised New Testament. *Half-course.*
- 17 *hf.* Professor THAYER. — Modern Lives of Christ. *Half-course.*
- 18 *hf.* Professor THAYER. — Biblical Geography and Archaeology. *Half-course.*
- 19 *hf.* Professor THAYER. — Selections from the Septuagint, with special reference to the use made of the Old Testament in the New. *Half-course.*
- 21 *hf.* Professor THAYER. — Selections from Greek and Latin writers of special interest to students of the New Testament. *Half-course.*
- 22^d *hf.* Professor LYON. — Classical Aramaic (Syriac). Roediger's *Chrestomathia Syriaca* (ed. 3). The Peshitto version of the New Testament. *Half-course.*
20. Professor THAYER. — Advanced study and research on such topics as the antecedents and aims of individual students may render advisable.

CHURCH HISTORY.

1. Asst. Professor PLATNER. — The Church of the first six centuries. 6 Div., 3 Gr., 2 Col.
2. Professor EMERTON. — The Mediaeval Church. — Formation of national churches in the Germanic states; establishment of the mediaeval papacy and its development to be the controlling force in European affairs; the Holy Roman Empire.
3. Professor EMERTON. — The Era of the Reformation in Europe from the rise of Italian Humanism to the close of the Council of Trent, 1350–1563. 2 Div., 10 Gr., 9 Col.

4. Asst. Professor PLATNER. — History of the Church since the Reformation. 1 Div., 1 Gr., 4 Col.
5. Professor EMERTON. — History of Christian Thought, considered in its relation to the prevailing philosophy of each period from the earliest time to the eighteenth century. 4 Div., 5 Col.
- 9 *hf.* Asst. Professor PLATNER. — Symbolics. *Half-course.* 8 Div.
- 20a. Professor EMERTON. — Advanced study and research. 1 Gr.
- 20b. Asst. Professor PLATNER. — Seminary in the History of Early Christian Literature. 1 Div.

COMPARATIVE STUDY OF RELIGIONS.

1. Comparative Study of Religions, particularly the Vedic Religion, the Hindu Philosophies, Buddhism, Mazdaism, and the Chinese Religions.

THEOLOGY.

- 2 *hf.* The Psychological Elements of Religious Faith. *Half-course.*
3. Systematic Theology. Theism and the special content of Christian Faith.
20. Theological Seminary.

SOCIAL QUESTIONS.

1. Professor PEABODY. — The Ethics of the Social Questions. — The modern social questions: Charity, the Family, Temperance, and various phases of the Labor question in the light of ethical theory. — Lectures, special researches, and required reading. 6 Div., 4 Gr., 99 Col., 8 Sci.
20. Professor PEABODY. — Sociological Seminary. Subject for the year: Christianity and the Social Question. 10 Div., 1 Col., 1 Law.

HOMILETICS AND PASTORAL CARE.

- 1 *hf.* Asst. Professor HALE. — The structure and analysis of sermons. *Half-course.* 8 Div.
2. Professor PEABODY and Asst. Professor HALE. — Each student writes eight sermons during the year, of which some are preached before the class and criticised by students and instructor; some are preached before the instructor and a member of the class and criticised by them; and the rest are criticised by the instructor privately. This course may be taken twice. 7 Div.
- 3 *hf.* Professor PEABODY. — The Minister as Pastor, and the history of Christian worship. *Half-course.* 5 Div.
- 4 *hf.* Professor PEABODY. — The Minister as Preacher, and the history of Christian preaching. *Half-course.*
- 5 *hf.* Asst. Professor HALE. — The Minister as Organizer and Director of Church Activities. *Half-course.* 6 Div.

ELOCUTION.

- 1 *hf.* Dr. CURRY. — Vocal training. *Half-course.* 7 Div.
- 2 *hf.* Dr. CURRY. — Vocal expression. *Half-course.*

SUMMER SCHOOL OF THEOLOGY.

- Professor PEABODY.**—Two lectures: Ethical Theories and Social Movements.
- Professor TAUSSIG.**—Two lectures: The Nature of Industrial Monopolies. Public Ownership.
- Hon. CARROLL D. WRIGHT.**—Two lectures: Has the Condition of the Masses Improved during the Last Half-century? Is there any Solution of the Labor Problem?
- Mr. J. G. BROOKS.**—Two lectures: The Ethical Side of Labor Problems. The Consumers' League.
- Professor CARVER.**—Four lectures: The Nature of an Economic Law. The Relation of the Institution of Private Property to Economic Progress. The Relation of Competition to Economic Progress. An Effective Programme for Raising Wages.
- Professor CLARK.**—Three lectures: Competition and Moral Law. (1) A Natural Economic System. (2) The Struggles of Classes. (3) The Society of the Future.
- Professor SHALEK.**—One lecture: Association and the Individual.
- Professor PALMER.**—Three lectures: Agencies of Redemption. (1) Restraint. (2) Enlargement. (3) Consecration.
- Professor EMERTON.**—Two lectures: Christianity and Asceticism.
- Professor FENN.**—Three lectures: The Kingdom of God. (1) The Idea of Jesus. (2) The Present Significance of the Idea. (3) Its Place in Theology.
- Professor MATHEWS.**—Two lectures: The Social Interpretation of Christianity in the Apostolic Age.
- Professor KING.**—Three lectures: The Influence of the Social Consciousness upon Theology. (1) The Real Teaching of the Social Consciousness as the Theologian must View It. (2) The Influence of the Social Consciousness upon the Conception of the Religious Life. (3) The Influence of the Social Consciousness upon Theological Doctrine.
- Professor BOWNE.**—One lecture: The Moralization of Life and the Vitalization of Morals.
- President ELIOT.**—One lecture: The Voluntary Church and its Ministry in a Democracy.
- Dean HODGES.**—Two lectures: The Christian Social Movement. The Christian Social Parish.
- Dr. BRADFORD.**—One lecture: The Social Problem of the Suburban Church.
- President HYDE.**—One lecture: The Social Problem of the Country Minister.
- Mr. WOODS.**—Two lectures: The Social Problem of the Minister in the City. The Special Field of the Social Settlement.

Principal WASHINGTON. — One lecture: The Religious Aspect of the Negro Question.

Mr. PAINE. — One lecture: The Organization of Charity in Small Towns.

Professor GILMAN. — Two lectures: The Attitude of the Clergyman toward Social Problems.

Professor MÜNSTERBERG. — One lecture: Psychology and Social Activity.

During the year from October 1, 1900, to September 30, 1901, there were added to the Divinity Library 483 volumes and 69 pamphlets by purchase, and 156 volumes and 118 pamphlets by gift. October 1, 1901, there were in the Library 30,624 volumes and 7,011 pamphlets. During the year there were 933 titles catalogued in the author catalogue and 130 titles in the subject catalogue. There were borrowed from the stack for home use 940 volumes; from the stack for hall use, 443 volumes; from the reserved books for over-night use, 783 volumes.

Much of the time of the Librarian was devoted to the preparation of a new edition of the General Catalogue of the School, which was published in the summer.

FRANCIS G. PEABODY, *Dean*.

THE LAW SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — I have the honor of presenting my report upon the Law School for the academic year 1900–01.

The table on pages 158, 159 gives the courses of study and instruction during the year, the text-books used, the number of exercises per week in each course, and the number of students

Year.	Whole No. of Students.	Total of College Graduates.	Harvard Gradu- ates.	Graduates of other Colleges.	Non- Gradu- ates.	Per cent. of College Graduates.	No. of Col- leges rep- resented.
1870-71	165	77	27	50	88	47	27
1871-72	138	70	34	36	68	51	25
1872-73	117	66	34	32	51	56	25
1873-74	141	86	49	37	55	61	25
1874-75	144	82	63	19	62	57	18
1875-76	173	93	60	33	80	54	25
1876-77	199	116	74	42	83	58	30
1877-78	196	121	80	41	75	62	30
1878-79	169	109	71	38	60	64	24
1879-80	177	118	90	28	59	66	20
1880-81	161	112	82	30	49	70	19
1881-82	161	99	66	33	62	61	22
1882-83	138	93	58	35	45	67	32
1883-84	150	105	75	30	45	70	25
1884-85	156	122	85	37	34	78	31
1885-86	158	122	83	39	36	77	29
1886-87	188	143	88	55	45	76	34
1887-88	225	158	102	56	67	70	32
1888-89	225	158	105	53	67	70	32
1889-90	262	189	122	67	73	72	41
1890-91	285	200	135	65	85	70	33
1891-92	370	257	140	117	113	69	48
1892-93	405	266	132	134	139	66	54
1893-94	367	279	129	150	88	76	56
1894-95	413	310	139	171	103	75	74
1895-96	475	380	171	209	95	80	82
1896-97	490	408	186	222	82	83	82
1897-98	551	490	229	261	61	89	77
1898-99	564	508	212	291	61	89	78
1899-00	613	557	236	321	56	91	67
1900-01	655	605	252	353	50	92	83
1901-02	681	582	247	335	49	92	92

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
First Year.			
Prof. Williston.	Contracts. Cases on Contracts: Langdell, vol. 1 (2d ed.), Williston, vol. 2 . .	3	256
Prof. Gray } Asst. Prof. Westengard }	Property. Gray's Cases on Property, vols. 1, 2	3	259
Prof. Smith	Torts. Cases on Torts: Ames, vol. 1 (2d ed.), Smith, vol. 2	2	266
Prof. Beale. Mr. Peabody .	Criminal Law and Procedure. Beale's Cases on Criminal Law	2	253
Asst. Prof. Westengard . . .	Civil Procedure at Common Law. Ames's Cases on Pleading	1	264
Second Year.			
Prof. Wambaugh	Agency. Wambaugh's Cases on Agency	2	126
Prof. Brannan	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes . .	2	75
Prof. Wambaugh	Contracts and Quasi-Contracts. Keener's Cases on Quasi-Contracts	2	9
Prof. Thayer	Evidence. Thayer's Cases on Evidence (2d ed.)	2	176
Prof. Wambaugh	Insurance, Marine, Fire, and Life. Wambaugh's Cases on Insurance	2	22
Prof. Ames	Jurisdiction and Procedure in Equity. Keener's Cases on Equity Jurisdiction, Vol. 1	2	79
Prof. Smith	Law of Persons. Smith's Cases on Persons	1	5
Prof. Gray } Asst. Prof. Westengard }	Property. Gray's Cases on Property, vols. 3, 4	2	186
Prof. Williston	Sales of Personal Property. Williston's Cases on Sales	2	131
Prof. Ames	Trusts. Ames's Cases on Trusts (2d ed.)	2	180
Prof. Ames	Admiralty. Ames's Cases on Admiralty	1	6
Prof. Williston	Bankruptcy. No text-book	1	4
Prof. Beale	Carriers. McClain's Cases on Carriers and Beale's Cases on Carriers	1	21
Prof. Brannan	Damages. Beale's Cases on Damages	1	4

Third Year.			
Prof. Thayer	Constitutional Law. Thayer's Cases on Constitutional Law	3	93
Prof. Beale	Conflict of Laws. Beale's Cases on the Conflict of Laws	2	48
Prof. Smith	Corporations. Smith's Cases on Private Corporations. Smith's Cases on Municipal Corporations	2	153
Prof. Strubel	International Law as administered by the Courts	2	
Prof. Ames	Jurisdiction and Procedure in Equity. Keener's Cases on Equity Jurisdiction, vol. 1	2	188
Prof. Brannan	Partnership. Ames's Cases on Partnership	2	23
Prof. Gray	Property. Gray's Cases on Property, vols. 5, 6	2	52
Prof. Ames	Suretyship and Mortgage. Ames's Cases on Suretyship	2	66
Prof. Wambaugh	Agency. Wambaugh's Cases on Agency	2	24
Prof. Brannan	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	50
Prof. Wambaugh	Contracts and Quasi-Contracts. Keener's Cases on Quasi-Contracts	2	18
Prof. Thayer	Evidence. Thayer's Cases on Evidence	2	17
Prof. Wambaugh	Insurance, Marine, Fire, and Life. Wambaugh's Cases on Insurance	2	44
Prof. Smith	Law of Persons. Smith's Cases on Persons	1	21
Prof. Gray	Property II. Gray's Cases on Property, vols. 3, 4	2	14
Asst. Prof. Westengard }	Sales of Personal Property. Williston's Cases on Sales	2	40
Prof. Williston	Trusts. Ames's Cases on Trusts (2d ed.)	2	17
Prof. Ames	Admiralty. Ames's Cases on Admiralty	1	17
Prof. Williston	Bankruptcy. No text-book	1	41
Prof. Beale	Carriers. McClain's Cases on Carriers and Beale's Cases on Carriers	1	53
Prof. Brannan	Damages. Beale's Cases on Damages	1	13

who offered themselves for examination in each course at the end of the year.

During the twelve months from October 1, 1900, to October, 1901, 5,902 bound volumes and 324 pamphlets were added to the library. The library contained, October 1, 1901, about 62,500 volumes and 6,400 pamphlets.

The table on page 157 exhibits the growth of the School during the last thirty-one years, in the number of students, the number and percentage of college graduates, and in the number of colleges represented by their graduates. The figures for the current year will be slightly increased by later entries.

The number of non-graduates, 49, is somewhat misleading. Thirty-six of these are Harvard College Seniors, on leave of absence and registered in the Law School, of whom 34 have completed the work required for the degree of A.B., and 2 lack only a half-course. If these 36 Seniors be transferred to the College Graduate column, we have 618 graduates, and the percentage of college graduates rises from 92 to 98.

JAMES BARR AMES, *Dean.*

THE FACULTY OF MEDICINE.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Dean of the Faculty of Medicine I have the honor to submit the following report for the academic year 1900–01.

In accordance with the recommendation of the Administrative Board of the Dental School, the Faculty voted that certificates of attendance be hereafter given to graduates of reputable Dental Schools who attend the courses in Operative or Mechanical Dentistry.

The Summer Courses in the Medical School were restricted to graduate and undergraduate students of Medical Schools recognized by the Faculty, and to such other persons as the Dean of the Faculty approved. Heretofore these courses have been open to all applicants, and it was felt that in some cases the privilege had been improperly used.

On recommendation of the Committee on the Course of Study, it was voted that the optional course in animal parasites, given by Professor T. Smith, be hereafter a part of the required work in Pathology.

A few changes have been made in the method of teaching in several of the departments, thereby increasing the amount of sectional instruction, especially in the third and fourth years. A practical examination has been held in some of the departments in addition to the written examination heretofore required. In some cases the time allowed for the written examination has been shortened.

At the close of the academic year, 152 men were recommended to the Corporation for degrees, as follows:—

Medical School . .	{	For the degree of M.D.	87
		“ “ “ <i>cum laude</i> . . .	29
Dental School . .	{	For the degree of D.M.D.	24
		“ “ “ <i>cum laude</i> . . .	5
Veterinary School .	{	For the degree of M.D.V.	6
		“ “ “ <i>cum laude</i> . . .	1
Total			152

During the year the Committee on New Buildings, of which Dr. J. C. Warren was Chairman, held a number of meetings, and finally submitted a series of preliminary sketches which were carefully considered at a special meeting of the Faculty.

HOOL.

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academic year 1900-01.

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plan was tried with marked success in all courses, according to
e professors in charge, with the exception of Anatomy, to which
allusion is made later in this report.

Building. — The most important change made since the last
report has been the connection of all the Chemical Laboratory hoods
with the fan which ventilates the Dissecting Room. The various
pipes connecting the Dissecting Room and the Laboratory hoods are
now all provided with valves, so that the fan can take the air from
any or all of the connecting pipes.

Physiology. — The following papers containing the results of
investigations by the laboratory staff and special students have been
published : —

Some ways of causing mitotic division in unfertilized Arbacia eggs.
By ALBERT P. MATHEWS. *The American Journal of Physiology*, Vol. IV,
pp. 343-347.

On Commencement day the President of the University announced the gift, from Mr. J. Pierpont Morgan, of New York, of the funds for the erection of three of the proposed new buildings for the Medical School.

Early in July the Corporation instructed the President to appoint a committee of the Medical Faculty as an Advisory Committee on these new buildings. The following Committee was appointed: Drs. W. L. Richardson (Chairman), H. P. Bowditch, J. C. Warren, E. S. Wood, W. F. Whitney, C. S. Minot, and F. Dexter.

This Committee subsequently elected Dr. Farrar Cobb as its Secretary, and appointed the three following sub-committees:—

On the Administrative Building: Drs. W. L. Richardson, J. C. Warren, and W. F. Whitney.

On the Anatomical and Histological Building: Drs. C. S. Minot and F. Dexter.

On the Physiological and Physiological Chemical Building: Drs. H. P. Bowditch and E. S. Wood.

These several sub-committees at once began the work of preparing plans, under the direction of the Building Committee of the Corporation, Drs. Walcott and Cabot, and with the assistance of the architects, Messrs. Shepley, Rutan and Coolidge.

At a subsequent date Dr. J. C. Warren was made Chairman of the Advisory Committee on the New Buildings, in place of Dr. W. L. Richardson, thus giving the Committee the same Chairman as the original Building Committee.

The Veterinary School was closed at the end of the year, two of the students being transferred to the Medical School, and instruction being provided for the others in the Veterinary Department of the University of Pennsylvania.

WILLIAM L. RICHARDSON, *Dean*.

THE MEDICAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — As Dean of the Medical School, I have the honor to submit the following report for the academic year 1900–01.

The Administrative Board for the Medical School was constituted as follows: Drs. W. L. Richardson, J. C. Warren, E. S. Wood, F. C. Shattuck, W. F. Whitney, C. M. Green, C. Harrington, F. Dexter, and F. B. Mallory. Dr. C. M. Green was subsequently chosen Secretary of the Board.

The increased number of new matriculants (196) was accounted for by the fact that it was the last opportunity for a student to enter the School by passing admission examinations. Many entered too young and with a training insufficient to enable them to profit by the instruction offered. Several dropped out early in the course, and the mid-year and final examinations showed how poorly fitted many others were to undertake the required work. Only one hundred passed the examinations successfully, seventy-five being conditioned in one or more of the four examinations, and fifteen failing to pass any of them.

In my last report I was able to state how satisfactorily the new plan of instruction had worked in the first year. The same class has now finished the second year, during the first term of which the new plan was tried with marked success in all courses, according to the professors in charge, with the exception of Anatomy, to which allusion is made later in this report.

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Physiology. — The following papers containing the results of investigations by the laboratory staff and special students have been published: —

Some ways of causing mitotic division in unfertilized Arbacia eggs.
By ALBERT P. MATHEWS. *The American Journal of Physiology*, Vol. IV, pp. 343–347.

On the methods of estimating the force of voluntary muscular contractions and fatigue. By SHEPHERD IVORY FRANZ. *The American Journal of Physiology*, Vol. IV, pp. 348-372.

The spontaneous secretion of saliva and the action of atropine. By ALBERT P. MATHEWS. *The American Journal of Physiology*, Vol. IV, pp. 482-499.

The effect of maximum muscular effort on blood-pressure. By J. H. MCCURDY. *The American Journal of Physiology*, Vol. V, pp. 95-103.

The inhibition time of a voluntary muscular contraction. By ALLEN CLEGHORN and COLIN C. STEWART. *The American Journal of Physiology*, Vol. V, 281-286.

The effect of carbon dioxide and oxygen on smooth muscle. By ALLEN CLEGHORN and H. D. LLOYD. *Proceedings of the American Physiological Society. The American Journal of Physiology*, Vol. V, pp. 16, 17. Also in *The Journal of the Boston Society of Medical Sciences*, Vol. V, pp. 367, 368.

Cerebral pressure following trauma. By W. B. CANNON. *The American Journal of Physiology*, Vol. VI, pp. 91-121. An abstract of this paper was read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1901, and was printed in the records of the Society and also in the *Boston Medical and Surgical Journal*, Vol. CXLV, p. 158.

There have also been published : —

An Introduction to Physiology (second edition), pp. 1-314. By W. T. PORTER. The University Press, Cambridge, 1901.

Experiments for students in the Harvard Medical School. Second Series. The nervous system and the skin, pp. 1-28. By W. T. PORTER. The University Press, Cambridge, 1901.

Experiments for students in the Harvard Medical School. Third Series. The eye, pp. 1-193. By W. T. PORTER. The University Press, Cambridge, 1901.

Catalogue of the Harvard Physiological Apparatus, containing forty-six pieces, specially designed for the laboratory teaching of Physiology to large numbers of students, pp. 1-51. The University Press, Cambridge, 1901.

The laboratory teaching of Physiology. First paper. By W. T. PORTER. *Science*, October, 1901.

The use of clinical records in teaching medicine. By W. B. CANNON. *Bulletin of the American Academy of Medicine*, 1901, Vol. V, pp. 203-213.

The investigation by Dr. J. W. Langelaan on muscle tone and tendon reflexes is in press. Some of these experiments were published in the *Archiv für Physiologie*, 1901, p. 106 *et seq.*

Dr. W. B. Cannon has continued his study of the movements of the food in the alimentary canal. Dr. Allen Cleghorn has almost completed his investigation of the effect of castration upon growth and muscular activity. Dr. S. I. Franz has made interesting observations upon the functions of certain portions of the cerebral cortex. Dr. Waldemar Koch has been employed upon the chemistry of nervous tissues. Mr. L. J. Henderson has continued his studies upon the chemistry of blood-pressure. Messrs. William Skarstrom and N. E. Sanders have investigated the immediate effect of exercise upon the blood-pressure and the pulse. Professor W. T. Porter has pursued his investigations on the physiology of the heart. Seven weeks were spent by him in the Zoölogical Station at Naples, in the study of *Torpedo*, *Octopus*, *Scyllium*, and similar forms. Professor Porter has found an explanation of fibrillar contraction of the heart, which has been presented informally in a lecture at the Woods Holl Marine Biological Laboratory, and, through the kindness of Professor Bowditch, at the International Congress of Physiologists in Turin. Much of Professor Porter's time has been spent in a systematic effort to bring the teaching of Physiology by laboratory methods within the reach of every school. For this purpose apparatus of precision has been designed upon lines permitting its manufacture in large quantities at a small cost. Of the forty-six pieces mentioned in the catalogue noted above, more than thirty are partly or wholly new inventions. This apparatus is in use in more than twenty American schools, and is beginning to be used abroad. The saving in outlay for Physiological teaching represented by the apparatus thus installed already exceeds fifty thousand dollars. In this work Professor Porter has profited by the valuable and generous criticism of past and present instructors and mechanics in the department.

Anatomy. — The new method of concentrating studies works well up to a certain point. In the first year a great deal is learned in a short time, but the examination at the end of the second year seems to show that two months partially devoted to Anatomy in the second term of the second year, after a complete intermission of one year, are far from sufficient.

The arrangement of the collection illustrating numerical variation in human spines has been completed by Professor Dwight, and, with the kind assistance of Dr. Whitney, has been properly set up and fully labelled in the Museum. It is proposed to add to it from time to time remarkable specimens, but no others.

Professor Dwight is continuing an investigation on a method of determining the sex of bones, which will probably be published

within a year. He is also working at anomalies of the bones of the wrist and ankle.

Dr. Lothrop has been doing good work on the internal structure of the nasal cavity.

Dr. Young has made a series of valuable specimens of transparent fetuses.

Histology and Embryology. — The new plan of study, or system of concentration, continues to justify itself by its results. Students are found to learn more and to retain their knowledge better than under the old system.

The work is hampered seriously by want of laboratory accommodations. The lack of suitable work rooms has increased very much the difficulty of securing trained assistants, as they prefer other laboratories where space for comfortable work is available. Until the new laboratories are open, the work of the department must remain severely handicapped.

The Embryological Collection has again grown, complete serial sections of seventy-one typical embryos having been added during the year. It proves of constantly increasing value for very varied investigations. It is very desirable to obtain means to enlarge the collection, which is unique. Five thousand dollars is needed for this purpose. A gift of this amount would be an important contribution to medical science.

The Histological Collection has been improved by the arrangement and cataloguing of preparations already in hand, and also by the new preparations added.

A larger number of investigations have been carried on in the laboratory than ever before. Of those not yet completed, mention may be made of Professor Minot's work on the development of the pineal region of the brain, and on the embryology of the rabbit; of Dr. Wood's researches on the primitive ova, and on heredity; of Dr. Lewis's on the development of the veins; of Dr. Bremer's on the pulmonary aorta, and of Dr. Eycleshymer's on the cell nucleus, the last being along a novel and important line of investigation.

Professor Minot has published the following papers: —

Notes on Anopheles. *Journal Boston Society Medical Sciences*, Vol. V, pp. 325-329, Pl. XXXI.

Further study of the unit system of laboratory construction. *Science*, Vol. XIII, pp. 409-415.

The embryological basis of pathology. *Science*, Vol. XIII, pp. 481-498, also *Boston Medical and Surgical Journal*, Vol. CLXIV, pp. 295-

305. Delivered as the Middleton Goldsmith Lecture before the New York Pathological Society, March 26, 1901.

Sollen die Bezeichnungen "Somatopleura" und "Splanchnopleura" in ihrem ursprünglichen richtigen oder in dem in Deutschland gebräuchlich gewordenen Sinne gebraucht werden? *Anat. Anzeiger*, Vol. XIX, pp. 203-205.

Improved automatic microtomes. *Journal Applied Microscopy*, Vol. IV, pp. 1317-1320.

Dr. R. T. ATKINSON has published The early development of the circulation in the supra-renal of the rabbit. *Anat. Anzeiger*, Vol. XIX, p. 610.

The following gifts have been received:—

Models of the development of the ear, from Dr. C. J. BLAKE.

Models of human embryos, from Dr. HARRIS KENNEDY.

A valuable collection of lizard's embryos, specially selected to furnish series for the embryological collection, from Dr. KARL PETER, of Breslau, Germany.

A large series of selected lamprey embryos, from Professor S. H. GAGE, of Cornell University.

During the year numerous additions and improvements have been made in the equipment for the elementary general courses.

Bacteriology.—Professor H. C. Ernst has devoted much time to the foundation of the American Association of Pathologists and Bacteriologists, and of The Journal of Medical Research, devoted to the publication of original investigations in medicine, and successfully established during the last summer.

With Mr. G. L. Baker, he has carried on a preliminary study on the effect of sunlight and the Röntgen rays upon primary inoculation tuberculosis.

With Mr. N. L. Berry, Jr., he is completing a long series of serial sections (three to four thousand in number) of leprous tissue forwarded for study from Hawaii. It is intended to make this a complete study of the distribution of the bacilli of the disease in the cutaneous tissue.

Dr. W. B. Cannon began a series of studies of the effects of concentrated sunlight as a whole, and of portions of the solar spectrum, upon the vitality and color-producing power of certain of the bacteria.

Dr. C. G. Page made some control experiments in the preparation of special culture media after the method of Rémy, for use in the isolation of the typhoid bacillus from faeces.

Dr. H. J. Perry has devoted much time to staining material from chancroids in a search for Ducray's bacillus, with no very satisfactory results.

Dr. W. H. Robey, Jr., started preliminary work upon the agglutinating reaction in tuberculosis. He has also, with Mr. G. P. Baker, made a study (bacteriological) of the sputa in cases of acute and chronic bronchitis, and phthisis; and with Dr. C. J. White (for the Cancer Commission) is carrying on a study of the bacteria of *Molluscum Contagiosum*, as cases appear.

Dr. J. D. Weis (for the Cancer Commission) has established a plant for the study of the yeasts after Jorgensen's methods, in respect especially to their possible connection with cancer.

Professor F. P. Gorham, of Brown University, has continued his work upon the light producing properties of the phosphorescent bacteria, and during the last summer has apparently secured results of value.

Dr. Langdon Frothingham has carried on the following studies:—

On the diagnosis of rabies by the Strauss method, its value; a statistical and experimental study. (Ready for publication.)

On the frequency and danger of actinomycosis and tuberculosis of the udder of the cow.

On the etiology of contagious epitheliomata of birds.

A study of tumors from animals (for the Cancer Commission).

On the histological lesions in rabies, with Dr. E. W. Taylor.

Dr. Benjamin Tenny continued his studies on Gonorrhoea, and secured some extremely interesting results in the inoculation of the gonococcus in connection with alcohol.

Mr. S. B. Wolbach has made some attempts to apply the Lipmann mercury process of color photography to the microscope, with encouraging results.

Mr. E. Taylor carried out some investigations upon the actual value of "Gram's stain" in the differentiation of many bacteria.

Chemistry.—There have been no changes of importance, the instruction having been essentially the same as during the previous year.

During the year the following publications have appeared:—

Clinical Examination of the Urine, by Dr. J. B. Ogden. Published by W. B. Saunders & Co.

Practical Blood Examination, by Dr. H. F. Hewes. Read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1900. Published in Boston Medical and Surgical Journal, August 1, 1901, and in Society Reports.

Hyperacidity of the Stomach, by Dr. H. F. Hewes. Published in Boston Medical and Surgical Journal, November 29, 1900.

Experimental Pharmacology and Therapeutics. — Professor Franz Pfaff communicated the results of an experimental work in cases of diverticulum of the oesophagus, at a meeting of the Society of American Physicians, in Washington, in May, 1901. This work will be published in Vol. XVI of the transactions of the same Society.

Dr. Alfred W. Balch published a research on the Supposed Activity of Corn Smut. Journal of the Boston Society of Medical Sciences.

Professor R. W. Tower, of Brown University, studied The Sulphur-Containing Bodies of Human Faeces. He intends to continue the work next year.

Dr. Elliott P. Joslin published the results of an experimental investigation, under the title, The Influence of Bile on Metabolism. Journal of Experimental Medicine, Vol. V, No. 5.

Dr. Joslin also communicated the results of a research on Metabolism in Diabetic Coma, with special reference to Acid Intoxication, at a meeting of the Society of American Physicians, in May. This work will be published in Vol. XVI, of the transactions of the same Society.

Dr. W. L. Smith studied The Influence of Defibrinated Blood on the Secretion of Bile. His research will soon be completed.

Mr. McCrudden studied The Metabolism of Certain Inorganic Salts in the Different Types of Arthritis in Human Beings. He is continuing his research.

Pathology. — The method of teaching Pathology which was begun two years ago has given satisfaction to both students and teachers. The general body of students has three hours of laboratory work daily, and sections of ten students are sent from the laboratory for the study of material which cannot be given to the entire class. These sections visit the hospitals, where they are taught and practice the anatomical and bacteriological methods of examining tissues. Sections are also taught in several of the smaller rooms of the building. Material for this study is preserved in such a way that the students can handle, draw and describe the specimens. Each student attends twenty of these sections, thus having not less than forty hours of this work. Both the general laboratory teaching and the sectional teaching are conducted on the principle of giving the students opportunity for objective study. A lecture is given daily in which the subjects studied during the day are described. The object of the lecture is not to impart information but to amplify and coördinate

who offered themselves for examination in each course at the end of the year.

During the twelve months from October 1, 1900, to October, 1901, 5,902 bound volumes and 324 pamphlets were added to the library. The library contained, October 1, 1901, about 62,500 volumes and 6,400 pamphlets.

The table on page 157 exhibits the growth of the School during the last thirty-one years, in the number of students, the number and percentage of college graduates, and in the number of colleges represented by their graduates. The figures for the current year will be slightly increased by later entries.

The number of non-graduates, 49, is somewhat misleading. Thirty-six of these are Harvard College Seniors, on leave of absence and registered in the Law School, of whom 34 have completed the work required for the degree of A.B., and 2 lack only a half-course. If these 36 Seniors be transferred to the College Graduate column, we have 618 graduates, and the percentage of college graduates rises from 92 to 98.

JAMES BARR AMES, *Dean*.

THE FACULTY OF MEDICINE.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — As Dean of the Faculty of Medicine I have the honor to submit the following report for the academic year 1900–01.

In accordance with the recommendation of the Administrative Board of the Dental School, the Faculty voted that certificates of attendance be hereafter given to graduates of reputable Dental Schools who attend the courses in Operative or Mechanical Dentistry.

The Summer Courses in the Medical School were restricted to graduate and undergraduate students of Medical Schools recognized by the Faculty, and to such other persons as the Dean of the Faculty approved. Heretofore these courses have been open to all applicants, and it was felt that in some cases the privilege had been improperly used.

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At the close of the academic year, 152 men were recommended to the Corporation for degrees, as follows :—

Medical School . .	{	For the degree of M.D.	87
		“ “ “ <i>cum laude</i> . . .	29
Dental School . .	{	For the degree of D.M.D.	24
		“ “ “ <i>cum laude</i> . . .	5
Veterinary School .	{	For the degree of M.D.V.	6
		“ “ “ <i>cum laude</i> . . .	1
Total			152

During the year the Committee on New Buildings, of which Dr. J. C. Warren was Chairman, held a number of meetings, and finally submitted a series of preliminary sketches which were carefully considered at a special meeting of the Faculty.

On Commencement day the President of the University announced the gift, from Mr. J. Pierpont Morgan, of New York, of the funds for the erection of three of the proposed new buildings for the Medical School.

Early in July the Corporation instructed the President to appoint a committee of the Medical Faculty as an Advisory Committee on these new buildings. The following Committee was appointed: Drs. W. L. Richardson (Chairman), H. P. Bowditch, J. C. Warren, E. S. Wood, W. F. Whitney, C. S. Minot, and F. Dexter.

This Committee subsequently elected Dr. Farrar Cobb as its Secretary, and appointed the three following sub-committees:—

On the Administrative Building: Drs. W. L. Richardson, J. C. Warren, and W. F. Whitney.

On the Anatomical and Histological Building: Drs. C. S. Minot and F. Dexter.

On the Physiological and Physiological Chemical Building: Drs. H. P. Bowditch and E. S. Wood.

These several sub-committees at once began the work of preparing plans, under the direction of the Building Committee of the Corporation, Drs. Walcott and Cabot, and with the assistance of the architects, Messrs. Shepley, Rutan and Coolidge.

At a subsequent date Dr. J. C. Warren was made Chairman of the Advisory Committee on the New Buildings, in place of Dr. W. L. Richardson, thus giving the Committee the same Chairman as the original Building Committee.

The Veterinary School was closed at the end of the year, two of the students being transferred to the Medical School, and instruction being provided for the others in the Veterinary Department of the University of Pennsylvania.

WILLIAM L. RICHARDSON, *Dean*.

THE MEDICAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR, — As Dean of the Medical School, I have the honor to submit the following report for the academic year 1900–01.

The Administrative Board for the Medical School was constituted as follows: Drs. W. L. Richardson, J. C. Warren, E. S. Wood, F. C. Shattuck, W. F. Whitney, C. M. Green, C. Harrington, F. Dexter, and F. B. Mallory. Dr. C. M. Green was subsequently chosen Secretary of the Board.

The increased number of new matriculants (196) was accounted for by the fact that it was the last opportunity for a student to enter the School by passing admission examinations. Many entered too young and with a training insufficient to enable them to profit by the instruction offered. Several dropped out early in the course, and the mid-year and final examinations showed how poorly fitted many others were to undertake the required work. Only one hundred passed the examinations successfully, seventy-five being conditioned in one or more of the four examinations, and fifteen failing to pass any of them.

In my last report I was able to state how satisfactorily the new plan of instruction had worked in the first year. The same class has now finished the second year, during the first term of which the new plan was tried with marked success in all courses, according to the professors in charge, with the exception of Anatomy, to which allusion is made later in this report.

Building. — The most important change made since the last report has been the connection of all the Chemical Laboratory hoods with the fan which ventilates the Dissecting Room. The various pipes connecting the Dissecting Room and the Laboratory hoods are now all provided with valves, so that the fan can take the air from any or all of the connecting pipes.

Physiology. — The following papers containing the results of investigations by the laboratory staff and special students have been published : —

Some ways of causing mitotic division in unfertilized Arbacia eggs.
By ALBERT P. MATHEWS. *The American Journal of Physiology*, Vol. IV,
1900, p. 17.

On the methods of estimating the force of voluntary muscular contractions and fatigue. By SHEPHERD IVORY FRANZ. *The American Journal of Physiology*, Vol. IV, pp. 348-372.

The spontaneous secretion of saliva and the action of atropine. By ALBERT P. MATHEWS. *The American Journal of Physiology*, Vol. IV, pp. 482-499.

The effect of maximum muscular effort on blood-pressure. By J. H. MCCURDY. *The American Journal of Physiology*, Vol. V, pp. 95-103.

The inhibition time of a voluntary muscular contraction. By ALLEN CLEGHORN and COLIN C. STEWART. *The American Journal of Physiology*, Vol. V, 281-286.

The effect of carbon dioxide and oxygen on smooth muscle. By ALLEN CLEGHORN and H. D. LLOYD. *Proceedings of the American Physiological Society. The American Journal of Physiology*, Vol. V, pp. 16, 17. Also in *The Journal of the Boston Society of Medical Sciences*, Vol. V, pp. 367, 368.

Cerebral pressure following trauma. By W. B. CANNON. *The American Journal of Physiology*, Vol. VI, pp. 91-121. An abstract of this paper was read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1901, and was printed in the records of the Society and also in the *Boston Medical and Surgical Journal*, Vol. CXLV, p. 158.

There have also been published : —

An Introduction to Physiology (second edition), pp. 1-314. By W. T. PORTER. The University Press, Cambridge, 1901.

Experiments for students in the Harvard Medical School. Second Series. The nervous system and the skin, pp. 1-28. By W. T. PORTER. The University Press, Cambridge, 1901.

Experiments for students in the Harvard Medical School. Third Series. The eye, pp. 1-193. By W. T. PORTER. The University Press, Cambridge, 1901.

Catalogue of the Harvard Physiological Apparatus, containing forty-six pieces, specially designed for the laboratory teaching of Physiology to large numbers of students, pp. 1-51. The University Press, Cambridge, 1901.

The laboratory teaching of Physiology. First paper. By W. T. PORTER. *Science*, October, 1901.

The use of clinical records in teaching medicine. By W. B. CANNON. *Bulletin of the American Academy of Medicine*, 1901, Vol. V, pp. 203-213.

The investigation by Dr. J. W. Langelaan on muscle tone and tendon reflexes is in press. Some of these experiments were published in the *Archiv für Physiologie*, 1901, p. 106 *et seq.*

Dr. W. B. Cannon has continued his study of the movements of the food in the alimentary canal. Dr. Allen Cleghorn has almost completed his investigation of the effect of castration upon growth and muscular activity. Dr. S. I. Franz has made interesting observations upon the functions of certain portions of the cerebral cortex. Dr. Waldemar Koch has been employed upon the chemistry of nervous tissues. Mr. L. J. Henderson has continued his studies upon the chemistry of blood-pressure. Messrs. William Skarstrom and N. E. Sanders have investigated the immediate effect of exercise upon the blood-pressure and the pulse. Professor W. T. Porter has pursued his investigations on the physiology of the heart. Seven weeks were spent by him in the Zoölogical Station at Naples, in the study of *Torpedo*, *Octopus*, *Scyllium*, and similar forms. Professor Porter has found an explanation of fibrillar contraction of the heart, which has been presented informally in a lecture at the Woods Holl Marine Biological Laboratory, and, through the kindness of Professor Bowditch, at the International Congress of Physiologists in Turin. Much of Professor Porter's time has been spent in a systematic effort to bring the teaching of Physiology by laboratory methods within the reach of every school. For this purpose apparatus of precision has been designed upon lines permitting its manufacture in large quantities at a small cost. Of the forty-six pieces mentioned in the catalogue noted above, more than thirty are partly or wholly new inventions. This apparatus is in use in more than twenty American schools, and is beginning to be used abroad. The saving in outlay for Physiological teaching represented by the apparatus thus installed already exceeds fifty thousand dollars. In this work Professor Porter has profited by the valuable and generous criticism of past and present instructors and mechanics in the department.

Anatomy. — The new method of concentrating studies works well up to a certain point. In the first year a great deal is learned in a short time, but the examination at the end of the second year seems to show that two months partially devoted to Anatomy in the second term of the second year, after a complete intermission of one year, are far from sufficient.

The arrangement of the collection illustrating numerical variation in human spines has been completed by Professor Dwight, and, with the kind assistance of Dr. Whitney, has been properly set up and fully labelled in the Museum. It is proposed to add to it from time to time remarkable specimens, but no others.

Professor Dwight is continuing an investigation on a method of determining the sex of bones, which will probably be published

within a year. He is also working at anomalies of the bones of the wrist and ankle.

Dr. Lothrop has been doing good work on the internal structure of the nasal cavity.

Dr. Young has made a series of valuable specimens of transparent foetuses.

Histology and Embryology. — The new plan of study, or system of concentration, continues to justify itself by its results. Students are found to learn more and to retain their knowledge better than under the old system.

The work is hampered seriously by want of laboratory accommodations. The lack of suitable work rooms has increased very much the difficulty of securing trained assistants, as they prefer other laboratories where space for comfortable work is available. Until the new laboratories are open, the work of the department must remain severely handicapped.

The Embryological Collection has again grown, complete serial sections of seventy-one typical embryos having been added during the year. It proves of constantly increasing value for very varied investigations. It is very desirable to obtain means to enlarge the collection, which is unique. Five thousand dollars is needed for this purpose. A gift of this amount would be an important contribution to medical science.

The Histological Collection has been improved by the arrangement and cataloguing of preparations already in hand, and also by the new preparations added.

A larger number of investigations have been carried on in the laboratory than ever before. Of those not yet completed, mention may be made of Professor Minot's work on the development of the pineal region of the brain, and on the embryology of the rabbit; of Dr. Wood's researches on the primitive ova, and on heredity; of Dr. Lewis's on the development of the veins; of Dr. Bremer's on the pulmonary aorta, and of Dr. Eycleshymer's on the cell nucleus, the last being along a novel and important line of investigation.

Professor Minot has published the following papers: —

Notes on Anopheles. *Journal Boston Society Medical Sciences*, Vol. V, pp. 325-329, Pl. XXXI.

Further study of the unit system of laboratory construction. *Science*, Vol. XIII, pp. 409-415.

The embryological basis of pathology. *Science*, Vol. XIII, pp. 481-498, also *Boston Medical and Surgical Journal*, Vol. CLXIV, pp. 295-

305. Delivered as the Middleton Goldsmith Lecture before the New York Pathological Society, March 26, 1901.

Sollen die Bezeichnungen "Somatopleura" und "Splanchnopleura" in ihrem ursprünglichen richtigen oder in dem in Deutschland gebräuchlich gewordenen Sinne gebraucht werden? *Anat. Anzeiger*, Vol. XIX, pp. 203-205.

Improved automatic microtomes. *Journal Applied Microscopy*, Vol. IV, pp. 1317-1320.

Dr. R. T. ATKINSON has published The early development of the circulation in the supra-renal of the rabbit. *Anat. Anzeiger*, Vol. XIX, p. 610.

The following gifts have been received : —

Models of the development of the ear, from Dr. C. J. BLAKE.

Models of human embryos, from Dr. HARRIS KENNEDY.

A valuable collection of lizard's embryos, specially selected to furnish series for the embryological collection, from Dr. KARL PETER, of Breslau, Germany.

A large series of selected lamprey embryos, from Professor S. H. GAGE, of Cornell University.

During the year numerous additions and improvements have been made in the equipment for the elementary general courses.

Bacteriology. — Professor H. C. Ernst has devoted much time to the foundation of the American Association of Pathologists and Bacteriologists, and of The Journal of Medical Research, devoted to the publication of original investigations in medicine, and successfully established during the last summer.

With Mr. G. L. Baker, he has carried on a preliminary study on the effect of sunlight and the Röntgen rays upon primary inoculation tuberculosis.

With Mr. N. L. Berry, Jr., he is completing a long series of serial sections (three to four thousand in number) of leprous tissue forwarded for study from Hawaii. It is intended to make this a complete study of the distribution of the bacilli of the disease in the cutaneous tissue.

Dr. W. B. Cannon began a series of studies of the effects of concentrated sunlight as a whole, and of portions of the solar spectrum, upon the vitality and color-producing power of certain of the bacteria.

Dr. C. G. Page made some control experiments in the preparation of special culture media after the method of Rémy, for use in the isolation of the typhoid bacillus from faeces.

Dr. H. J. Perry has devoted much time to staining material from chancreoids in a search for Ducray's bacillus, with no very satisfactory results.

Dr. W. H. Robey, Jr., started preliminary work upon the agglutinating reaction in tuberculosis. He has also, with Mr. G. P. Baker, made a study (bacteriological) of the sputa in cases of acute and chronic bronchitis, and phthisis; and with Dr. C. J. White (for the Cancer Commission) is carrying on a study of the bacteria of *Molluscum Contagiosum*, as cases appear.

Dr. J. D. Weis (for the Cancer Commission) has established a plant for the study of the yeasts after Jorgensen's methods, in respect especially to their possible connection with cancer.

Professor F. P. Gorham, of Brown University, has continued his work upon the light producing properties of the phosphorescent bacteria, and during the last summer has apparently secured results of value.

Dr. Langdon Frothingham has carried on the following studies:—

On the diagnosis of rabies by the Strauss method, its value; a statistical and experimental study. (Ready for publication.)

On the frequency and danger of actinomycosis and tuberculosis of the udder of the cow.

On the etiology of contagious epitheliomata of birds.

A study of tumors from animals (for the Cancer Commission).

On the histological lesions in rabies, with Dr. E. W. Taylor.

Dr. Benjamin Tenny continued his studies on Gonorrhoea, and secured some extremely interesting results in the inoculation of the gonococcus in connection with alcohol.

Mr. S. B. Wolbach has made some attempts to apply the Lipmann mercury process of color photography to the microscope, with encouraging results.

Mr. E. Taylor carried out some investigations upon the actual value of "Gram's stain" in the differentiation of many bacteria.

Chemistry.—There have been no changes of importance, the instruction having been essentially the same as during the previous year.

During the year the following publications have appeared:—

Clinical Examination of the Urine, by Dr. J. B. Ogden. Published by W. B. Saunders & Co.

Practical Blood Examination, by Dr. H. F. Hewes. Read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1900. Published in Boston Medical and Surgical Journal, August 1, 1901, and in Society Reports.

Hyperacidity of the Stomach, by Dr. H. F. Hewes. Published in Boston Medical and Surgical Journal, November 29, 1900.

Experimental Pharmacology and Therapeutics. — Professor Franz Pfaff communicated the results of an experimental work in cases of diverticulum of the oesophagus, at a meeting of the Society of American Physicians, in Washington, in May, 1901. This work will be published in Vol. XVI of the transactions of the same Society.

Dr. Alfred W. Balch published a research on the Supposed Activity of Corn Smut. Journal of the Boston Society of Medical Sciences.

Professor R. W. Tower, of Brown University, studied The Sulphur-Containing Bodies of Human Faeces. He intends to continue the work next year.

Dr. Elliott P. Joslin published the results of an experimental investigation, under the title, The Influence of Bile on Metabolism. Journal of Experimental Medicine, Vol. V, No. 5.

Dr. Joslin also communicated the results of a research on Metabolism in Diabetic Coma, with special reference to Acid Intoxication, at a meeting of the Society of American Physicians, in May. This work will be published in Vol. XVI, of the transactions of the same Society.

Dr. W. L. Smith studied The Influence of Defibrinated Blood on the Secretion of Bile. His research will soon be completed.

Mr. McCrudden studied The Metabolism of Certain Inorganic Salts in the Different Types of Arthritis in Human Beings. He is continuing his research.

Pathology. — The method of teaching Pathology which was begun two years ago has given satisfaction to both students and teachers. The general body of students has three hours of laboratory work daily, and sections of ten students are sent from the laboratory for the study of material which cannot be given to the entire class. These sections visit the hospitals, where they are taught and practice the anatomical and bacteriological methods of examining tissues. Sections are also taught in several of the smaller rooms of the building. Material for this study is preserved in such a way that the students can handle, draw and describe the specimens. Each student attends twenty of these sections, thus having not less than forty hours of this work. Both the general laboratory teaching and the sectional teaching are conducted on the principle of giving the students opportunity for objective study. A lecture is given daily in which the subjects studied during the day are described. The object of the lecture is not to impart information but to amplify and coördinate

the knowledge which the student has acquired. No attempt is made to cover the entire subject. The student acquires knowledge of the most essential subjects, and training in observation and description. A large part of the teachers' time is occupied in directing the sectional work.

The greater interest of the students under this method has been striking. The number of incompetents has steadily declined. There is a genuine enthusiasm in the students' study of the subject, and in the long hours of laboratory work their zeal does not flag. They have knowledge which they can use; and they know the methods of obtaining knowledge.

The teachers in the department are a unit in their approval of the system. Teaching which consists in helping others to learn, and in learning with them, is not drudgery but an intellectual stimulus.

The only disadvantage of the method is due to lack of space. Owing to all the available space being used for teaching, research work in the laboratory must be given up during the course.

The following publications have appeared during the last year: —

Carcinoma. By Professor W. T. COUNCILMAN. An article for Buck's *Reference Handbook of the Medical Sciences*.

Necroses of the liver. By Professor F. B. MALLORY. *Journal of Medical Research*.

A simple method of cultivating Anaërobic bacteria. By Dr. J. H. WRIGHT. *Journal of the Boston Society of Medical Sciences*.

Aberrant pancreas in the region of the umbilicus. By Dr. J. H. WRIGHT. *Journal of the Boston Society of Medical Sciences*.

Pathological technique. Second edition. By Drs. F. B. MALLORY and J. H. WRIGHT.

Adipositas. By Dr. J. H. PRATT. An article for Buck's *Reference Handbook of the Medical Sciences*.

Progressive muscular atrophy, without involvement of the pyramidal tracts. By Dr. E. W. TAYLOR. *Journal of the Boston Society of Medical Sciences*.

Comparative Pathology. — During the past year the work of undergraduate instruction has been increased by making obligatory the voluntary two weeks' course in protozoan and higher animal parasites as causes of disease, and incorporating it with the regular course in pathology given during the second year. The fourth year elective remains unchanged.

Much time has been given to increasing and cataloguing the collections of pathological material, of slides, lantern-slides, and charts to be used in the courses mentioned above.

Research work on various problems has been continued during the year in the laboratory of the Bussey Institution. However, the meagre equipment and assistance restrict such work within narrow limits and delay its completion.

There is great need in this country for a laboratory in which animal pathology can be studied in a truly comparative manner and in the most thoroughly scientific spirit. It is to be hoped that by a general enlargement of its facilities this department may supply the need in the near future.

The following publications, by Professor Smith, have appeared during the year:—

The antitoxin unit in diphtheria. *Journal Boston Society of Medical Sciences*, 1900, Vol. V, pp. 1-11.

Public health laboratories. Address. *American Public Health Association*, 1900, Vol. XXVI, pp. 295-302. *Boston Medical and Surgical Journal*, 1900, Nov. 15.

Notes on the occurrence of *Anopheles punctipennis* and *A. quadrimaculatus* in the Boston suburbs. *Journal Boston Society of Medical Sciences*, 1901, Vol. V, pp. 321-324.

Syllabus on animal parasites and their relation to pathological processes. 18 pp.

The etiology of malaria, with special reference to the mosquito as an intermediate host. *Journal Massachusetts Association of Boards of Health*, October, 1901.

The following paper is in press:—

The production of sarcosporidiosis in the mouse by feeding infected muscular tissue. *Journal of Experimental Medicine*, Vol. VI, No. 1; also in *Transactions of Association of American Physicians*, Vol. XVI, 1901.

Surgery.—The two Surgical Departments, Surgery and Clinical Surgery, have taken a step intended to harmonize the instruction given in those departments and thus avoid some of the complications which have arisen during the gradual development of the various courses in each department.

An Executive Committee has been formed, consisting of the Professor of Clinical Surgery (Chairman), the Professor of Surgery, and the two Assistant Professors. The Assistant Professor of Surgery is the Secretary and executive officer.

Such an organization, now in existence over one year, has enabled the departments to plan a more intelligent arrangement of the course

of study for the students in Surgery, and many of the details are already in successful working order.

Original research in Surgical Pathology has been confined during the past year chiefly to the study of the cause of cancer, under the conditions of the Croft bequest. The subject is so broad that investigations have been carried on along several different lines. Inoculation of animals with certain yeasts, claimed to be the cause of cancer by some observers, have been made. A systematic attempt to classify these so-called pathogenic yeasts is now in progress. A series of cultural experiments with tissue from fresh cancers is being performed, to see if yeasts are constantly present in the tumors. An examination of cancers from many of the lower animals is being made, in order to determine whether the so-called "cancer parasites" are present in animal as well as in human cancers. And, finally, an experimental study of the lesions produced by the coccidium oniforme has been completed.

The result of these studies will be published in the second annual report.

The work has been carried on enthusiastically by the members of the Cancer Commission in spite of the very limited laboratory accommodations afforded to the Surgical Department in the School. The field of research could be greatly enlarged were proper facilities offered for the study of many other interesting problems in Surgery.

Theory and Practice.—The course in Theory and Practice has been so modified as to promote drill in the use of laboratory methods in the examination of patients. For this purpose the class is divided into sections, each of ten students or less, and an instructor superintends the work of each section.

Under the supervision of Dr. E. G. Cutler, a Manual of Outlines of Medical Diagnosis has been prepared to aid in systematizing the teaching. This Manual has proven so useful, that a considerable demand has been made for it by medical teachers elsewhere.

To encourage the class in its interest in the work of the sections, credit, not exceeding twenty-five per cent. of the highest mark attainable, is given at the final examination of the year.

Clinical Medicine.—The only notable change in the methods of instruction in the Department of Clinical Medicine this year is the following: For some years past every fourth-year student has been expected to see, follow up, and report on at least three cases of illness confining the patients to their homes. These cases were selected by the dispensary District Physicians and the work was under the direct supervision of one of the assistants in the depart-

ment. The results have not proved as satisfactory as was hoped for. This branch of instruction has therefore been abandoned, and in its place three weeks' service in a Medical Out-Patient Clinic is provided for each student during his fourth year, under assistants in the Department of Clinical Medicine, and Theory and Practice. This work is, obviously, very practical in character and receives a percentage of the examination mark.

Hygiene. — Under the direction of Dr. Harrington, Mr. W. F. Boos has made an investigation of the extent to which foods, as bought in the public markets, are treated with preservatives of an objectionable nature. Several new and improved methods for the quantitative determination of these substances were devised. The investigation is not yet complete.

Under the direction of Dr. Harrington, Dr. D. H. Walker has been engaged in an investigation of the poisonous properties of respired air with especial reference to the question of toxicity of matters given off by the skin. Dr. Walker began also a research on the nature of a substance which was isolated from meat which had caused an outbreak of food poisoning. Both of these investigations were unavoidably interrupted, but are now being renewed.

During the year Dr. Harrington brought out, through Lea Bros. & Co., a text-book in Hygiene entitled *Practical Hygiene*: octavo, 721 pages, illustrated with 12 plates and 105 engravings.

Museum. — During the past year the work in the Museum has been carried on in the same manner as formerly. In the first half year it was extensively used by the students in the Pathological course, who, in small numbers, were taken into the alcoves to study the specimens under the Professor of Pathology and his assistants.

The specimens have also been largely drawn upon to illustrate books and articles in preparation. Of the specimens received during the year about one hundred have been permanently preserved in the collection and entered in the catalogue.

On account of the crowded condition of the shelves, it would be necessary to re-arrange the collection entirely if the Museum were to remain for any great length of time in its present quarters. Fortunately, the prospect of new rooms in the buildings given by Mr. Morgan renders such a step unnecessary.

A large addition has been made to the lantern-slides, which have been catalogued separately from the specimens above mentioned.

During the past year there have been the usual number of visitors besides the regular students.

Scholarships. — Early in the year the Lucius F. Billings Scholarship, with an income of two hundred dollars, was founded from a bequest under the will of Lucius F. Billings. As the scholarships for the second, third, and fourth classes had been awarded, it was voted that this scholarship for the year 1900–01 should be given to a member of the first class.

The Scholarships and Fellowships were awarded as follows : —

Barringer Scholarship, No. 1,	H. W. Goodall, A.B.,	3d Class.
Isaac Sweetser Scholarship,	R. J. Graves, S.B.,	2d "
Claudius M. Jones "	F. H. Albee, A.B.,	2d "
Hilton "	S. V. R. Hooker, A.B.,	3d "
" "	C. W. Eveleth, S.B.,	2d "
Barringer " No. 2,	W. L. Sargent, A.B.,	2d "
Faculty "	E. L. Hunt,	3d "
" "	G. T. Spicer, A.B.,	2d "
" "	W. L. Hearn,	3d "
" "	E. E. Tyzzer, A.M.,	3d "
Eveleth "	A. S. Murphy,	3d "
" "	R. F. Gibson,	4th "
" "	F. T. Lewis, A.M.,	4th "
Alfred Hosmer Linder Scholarship,	L. R. Bragg, S.B.,	4th "
Edward Wigglesworth "	A. H. Childs, A.B.,	4th "
Charles B. Porter "	O. C. Blair,	2d "
John Thomson Taylor "	C. S. Oakman, A.B.,	2d "
Orlando W. Doe "	G. C. Moore, A.B.,	3d "
Charles Pratt Strong "	F. E. Clark,	4th "
David Williams Cheever "	C. D. Easton, A.M.,	1st "
Lucius F. Billings "	F. R. Wheelock,	1st "
Lewis and Harriet Hayden "	T. H. Thomas, A.B.,	2d "
John Foster Fund,	E. W. Small,	3d "
" " "	C. Duncan, B.L.,	2d "
Cotting Gift,	G. W. Winchester,	3d "

The George Cheyne Shattuck Fellowship was awarded Mr. W. F. Boos, A.B., for a research, in the Laboratory of Hygiene, in the physiological action of certain substances used as food preservatives and the extent to which they are employed in the community.

The Charles Eliot Ware Fellowship was awarded Mr. L. J. Henderson, A.B., of the third class, for studies in osmosis and blood serum.

The John Ware Fellowship was awarded Assistant Professor R. W. Tower, of Brown University, for a research on sulphur-compounds of normal human faeces, in Assistant Professor Pfaff's laboratory, with a view to the Ph.D. degree of Harvard.

Dr. Robert Leonard Emerson was appointed to a John Harvard Fellowship.

No essay was submitted for the William H. Thorndike prize.

The statistics of the School will be found in the following tables :

COURSES OF INSTRUCTION, 1900-01.

FIRST YEAR.

Students
examined.

Anatomy. — Professor T. DWIGHT, Associate Professor DEXTER, Demonstrator BROOKS, Instructor TENNEY, Assistant LOTHROP, Assistant YOUNG, Assistant WHITESIDE, Assistant MOSHER, Assistant DAVIS, Assistant ALLEN, Assistant BUTLER, Assistant CODMAN, Assistant MARCY, Assistant STETSON, Assistant WARREN.	169
Physiology. — Professor H. P. BOWDITCH, Associate Professor W. T. PORTER, Assistant CLEGHORN, Assistant FRANZ, Assistant KOCH, Instructor MATHEWS, Instructor CANNON.	178
Histology and Embryology. — Professor MINOT, Assistant STUBBS, Assistant WOODS, Assistant DONOGHUE, Assistant LARRABEE, Assistant BLAKELEY, Assistant CALLAHAN, Austin Teaching Fellow EYCLESHYMER, Austin Teaching Fellow ATKINSON.	165
Physiological Chemistry. — Associate Professor HILLS, Assistant CONNOLLY, Assistant BADGER, Assistant LADD, Assistant MUSGRAVE.	178

SECOND YEAR.

Bacteriology. — Professor ERNST, Assistant COOLIDGE, Assistant DENNY, Assistant PAGE, Assistant PERRY, Assistant ROBey, Assistant EVERETT.	116
Advanced Anatomy. — Professor T. DWIGHT, Associate Professor DEXTER.	140
Pathology and Pathological Anatomy. — Professor COUNCILMAN, Assistant Professor MALLORY, Instructor TAYLOR, Instructor WRIGHT, Instructor PRATT, Demonstrator NICHOLS, Assistant MAGRATH, Assistant VERHOEFF.	129
Clinical Chemistry. — Professor WOOD, Instructor OGDEN, Assistant CONNOLLY, Assistant BADGER, Assistant LADD, Assistant MUSGRAVE.	135
Therapeutics. — Assistant Professor PFAFF, Assistant JORDAN, Assistant BALCH.	149
Theory and Practice. — Instructor CUTLER.	
Clinical Medicine. — Instructor SEARS, Instructor VICKERY, Assistant BARTOL, Assistant PRESCOTT, Assistant J. M. JACKSON, Assistant AMES, Assistant CABOT.	
Surgery. — Assistant Professor BURRELL, Instructor C. A. PORTER, Instructor MUNRO, Demonstrator NICHOLS.	

THIRD YEAR.

Theory and Practice of Medicine. — Professor FITZ, Instructor CUTLER.	140
Obstetrics. — Professor W. L. RICHARDSON, Asst. Professor C. M. GREEN, Instructor REYNOLDS, Assistant HIGGINS, Assistant NEWELL.	138
Clinical Obstetrics. — Professor W. L. RICHARDSON, Asst. Professor C. M. GREEN, Instructor REYNOLDS, Assistant HIGGINS, Assistant NEWELL.	

Fourth Year Electives.

Ophthalmology. — Professor WADSWORTH.	8
Otology. — Professor BLAKE, Professor J. O. GREEN, Assistant HAMMOND, Assistant CROCKETT.	8
Dermatology. — Instructor BOWEN, Assistant C. J. WHITE.	86
Diseases of the Nervous System. — Professor PUTNAM, Instructor WALTON, Instructor KNAPP.	15
Gynaecology. — Asst. Professor C. M. GREEN.	33
Operative Obstetrics. — Asst. Professor C. M. GREEN, Instructor REYNOLDS, Assistant HIGGINS, Assistant NEWELL.	57
Operative Surgery. — Professor C. B. PORTER, Assistant MIXTER, Instruc- tor MUNRO, Instructor MONKS, Assistant BALCH, Assistant SCUDDER, Assistant THORNDIKE, Assistant MUMFORD, Demonstrator NICHOLS, Assistant BLAKE, Assistant DWIGHT, Assistant LUND, Instructor C. A. PORTER, Assistant BREWSTER, Assistant COBB, Assistant CABOT.	74
Otorhinology. — Professor ERNST, Assistant COOLIDGE, Assistant DENNY, Assistant PERRY, Assistant PAGE, Assistant ROBey.	12
Orthopedics. — Asst. Professor BRADFORD.	50
Clinical Microscopy. — Curator WHITNEY.	10
Clinical Chemistry. — Professor WOOD, Instructor HEWES, Instructor OGDEN.	8
Anatomy. — Demonstrator BROOKS.	20
Embryology. — Professor MINOT, Assistant WOODS, Austin Teaching Fel- low ATKINSON.	3
Histology of the Nervous System. — Professor MINOT, Assistant WOODS, Austin Teaching Fellow ATKINSON.	2
Physiological Chemistry. — Asst. Professor PFAFF.	1
Comparative Etiology of Infectious Diseases. — Professor SMITH.	2
Physiology. — Professor BOWDITCH, Associate Professor W. T. PORTER.	2
Hygiene. — Asst. Professor HARRINGTON.	1

TABLE I.—GENERAL STATISTICS OF THE SCHOOL.

EXAMINATIONS FOR ADMISSION.

		Physics.	Latin.	Eng-lish.	Elec-tive 1.	Elec-tive 2.	Gen. Chem.	Qual. Analysis.	
1900.	June {	Offered	59	62	74	70	55	55	48
		Conditioned	11	21	48	19	12	20	5
	Sept. {	Offered	57	56	74	55	44	70	36
		Conditioned	10	13	20	11	15	11	3

New matriculants . . . 196 { Graduates in Medicine 3
 Undergraduates 193

Of these 42.34 % presented a degree in Letters, Science, or Medicine.

The whole number of students in attendance :—

In courses for graduates	31
Fourth Class	115
Third Class	125
Second Class	154
First Class	198
Total	628

Applicants for Degree 131

Rejected 15

Graduated 116

Of the 116 students who received the degree of Doctor of Medicine, 29 received the degree *cum laude*.

	SUMMER COURSES.					GRADUATE COURSES.				
	1897.	1898.	1899.	1900.	1901.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Courses taken . .	130	118	142	167	151	175	114	134	63	40
Students	110	107	116	149	126	75	60	50	46	29
Receipts	\$3129	\$3360	\$3895	\$4695	\$4275	\$3810	\$3780	\$2861.25	\$1465	\$1065

TABLE II. — FINAL EXAMINATIONS.

	FIRST CLASS.										SECOND CLASS.											
	Histology.		Bacteriology.		Physiology.		Chemistry.		Anatomy.		Physiology.		Clinical Chemistry.		Path. Anatomy.		Adv. Anatomy.		Therapeutics.		Bacteriology.	
	%		%		%		%		%		%		%		%		%		%		%	
1897 { Passed Rejected Total	136	7	111	136	113	126	22	17	104	110	108	123	12	36	26	31	22	64	37			
	11		31	24	15	36		47	30			22										
	147		142	160	160	162		160				140	140	140	141	141	172					
1898 { Passed Rejected Total	129	9	117	119	121	120	16	16	107	99	111	120	12	50	35	26	41	27				
	13		27	24	16	24		40	25			17	12									
	142		144	143	143	144		161				136	157	134	152	134	152					
1899 { Passed Rejected Total	124	15	118	117	117	115	25	7	109	105	83	113	6	28	20	18	14	51	38			
	22		27	18	19	39		43	27			1										
	146		145	145	145	154		160				120	137	123	123	123	134					
1900 { Passed Rejected Total	146	9		129	113	116		133	148	110	109	133	15	5	3	32	22	62	36			
	14			18	12	35		23	9			15	10									
	160			147	125	151		148	163			148	148	163	142	142	171					
1901 { Passed Rejected Total	141	13		147	143	126		123	126			123	12	7	5	88	89					
	24			31	17	52		52	15			12	9			52	37	60	40			
	165			178	160	178		169				135	135	129	140	140	140	140	116			

TABLE 1. — GENI

EN ·

1900.	June	Offered
	Sept.	Offered

New matr.

all these

The whole m:

198
2100

[illegible]

TABLE II. — FINAL EXAMINATIONS, CONTINUED.

		FOURTH CLASS. — ELECTIVES.																																							
		Ophthalmology.		Otolaryngology.		Gynecology.		Dermatology.		Diseases of Nervous System.		Operative Obstetrics.		Operative Surgery.		Bacteriology.		Orthopedics.		Clinical Microscopy.		Chemical.		Anatomy.		Physiology.		Embryology.		Hygiene.		Physiology.		Comparative Pathology of Infections.		Histology of the Nervous System.					
		Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected		
1897	Passed	5	0	1	0	28	0	6	0	55	46	45	2	4	0	4	0	4	0	4	0	6	0	11	0	1	0	4	0	1	0	3	0	0	0	2	0	2	0		
	Rejected	0	0	0	0	15	0	0	0	23	31	1	6	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	5	0	1	0	43	0	6	0	78	77	46	8	8	0	6	0	4	0	4	0	6	0	11	0	1	0	4	0	1	0	3	0	0	0	2	0	2	0	2	0
1898	Passed	5	0	1	0	19	0	45	0	71	70	24	11	10	0	10	0	4	0	4	0	17	11	11	0	1	0	4	0	1	0	3	0	0	0	2	0	2	0		
	Rejected	0	0	0	0	3	0	16	0	5	19	3	10	1	0	3	11	0	0	0	0	2	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	5	0	1	0	22	0	61	0	76	89	27	21	11	0	13	11	4	0	4	0	19	11	11	0	1	0	4	0	1	0	3	0	0	0	2	0	2	0		
1899	Passed	6	7	16	0	1	0	57	0	38	88	18	1	25	0	4	0	4	0	4	0	7	0	10	0	0	0	1	0	3	0	0	0	3	0	2	0	2	0		
	Rejected	1	14	0	0	1	0	5	8	5	35	7	6	6	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	7	21	16	0	2	0	62	8	43	123	25	7	31	0	6	1	4	0	4	0	7	0	10	0	0	0	1	0	3	0	0	0	3	0	2	0	2	0		
1900	Passed	3	4	11	0	11	0	54	0	59	81	6	0	40	0	5	0	5	0	5	0	4	0	12	0	1	0	1	0	2	0	0	0	4	0	4	0	2	0		
	Rejected	0	0	0	0	0	0	3	5	1	17	0	0	7	0	0	0	3	7	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0		
	Total	3	4	11	0	11	0	57	5	60	88	6	0	47	0	5	0	8	43	5	0	4	0	14	0	1	0	1	0	2	0	0	2	2	4	0	2	0			
1901	Passed	3	3	33	0	32	0	32	0	56	71	10	17	50	0	10	0	50	0	10	0	3	0	20	0	2	0	2	0	2	0	1	0	1	0	2	0	2	0		
	Rejected	0	0	0	0	0	0	4	11	2	13	1	4	3	0	2	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	3	3	33	0	36	0	36	11	58	84	11	21	53	0	12	17	50	0	10	0	3	0	20	0	2	0	2	0	2	0	1	0	1	0	2	0	2	0		

TABLE II. — FINAL EXAMINATIONS, CONTINUED.

			FOURTH CLASS. — ELECTIVES.																															
	Ophthalmology.	Otolaryngology.	Gynecology.		Dermatology.		Diseases of Nervous System.		Operative Obstetrics.		Operative Surgery.		Bacteriology.		Orthopedics.		Clinical Microscopy.		Chemistry.		Anatomy.		Physiology.		Embryology.		Hygiene.		Physiology.		Comparative Pathology of Infectious Diseases.		Histology of the Nervous System.	
			Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected	Passed	Rejected
1897	Passed	5	0	1	28	5	6	0	55	31	46	3	45	2	4	0	4	0	6	0														
	Rejected	0	0	0	15	0	0	0	23	31	3	6	1	0	0	0	0	0	0	0														
	Total	5	1	33	43	6	6	0	78	62	49	9	46	3	4	0	4	0	6	0														
1898	Passed	5	1	19	45			21	71	10	70	1	24		10		4		17		11		1											
	Rejected	0	0	3	14		16	5	8	10	1	3	11		0		0		2		0		0		4									
	Total	5	1	22	59		27	26	79	20	71	2	35		10		4		19		11		1		4									
1899	Passed	6	7	16	57			9	38	7	88		18		25		4		7		10				1									
	Rejected	1	14	0	6		8	35	3	7	6		2		0		0		0		0		0		0									
	Total	7	21	16	63		14	41	41	14	94		20		25		4		7		10				1									
1900	Passed	3	4	11	54			5	56	0	81		6		40		5		4		12		1		1									
	Rejected	0	0	0	3		5	17	0	0	7		0		3		0		0		2		0		0									
	Total	3	4	11	57		6	22	56		88		6		43		5		4		14		1		1									
1901	Passed	3	3	33	32			13	56		71		10		50		10		3		20		2		2									
	Rejected	0	0	0	0		11	2	1	2	3		2		17		0		0		0		0		1									
	Total	3	3	33	32		15	15	57		74		12		67		10		3		20		2		2									

The falling off in the attendance in Summer Courses is accounted for by the fact that hereafter candidates for admission to the School must present a degree in Arts, Literature, Philosophy, or Science, from a recognized college or scientific school, or they must in some way have acquired an equivalent education and training. Heretofore a large number of undergraduate students have taken the summer courses in General Chemistry and Qualitative Analysis to prepare for the admission examinations in these subjects. The number registered for these courses in the summer of 1900 was 33 ; in the summer of 1901 only 9 were in attendance.

WILLIAM L. RICHARDSON, *Dean*.

THE DENTAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — As Dean of the Dental School I have the honor to present my report for the academic year, namely, from September 27, 1900, to September 26, 1901.

The number of students enrolled was 127, divided as follows:—

Third-year students	53
Second-year students	30
First-year students	<u>44</u>
	127
Withdrew during the year	7

In June 46 students applied for the degree and 17 failed, leaving a graduating class of 29, of whom 5 received the degree *cum laude*.

The courses of instruction during the year were practically the same as last year, with the exception of Bacteriology, which was changed from the first to the second year. The instruction has been as follows:—

Anatomy. — Professor T. DWIGHT, Assistant Professor DEXTER, Demonstrator BROOKS, Instructor TENNEY, Assistants LOTHROP, ALLEN, CODMAN, MOSHER, YOUNG, BUTLER, MARCY, WHITESIDE, DAVIS, STETSON, WARREN.

Physiology. — Professor H. P. BOWDITCH, Associate Professor W. T. PORTER, Instructors MATHEWS, CANNON, Assistants CLEGHORN, PARKER, FRANZ, KOCH.

Histology and Embryology. — Professor MINOT, Assistants BLAKELEY, DONOGHUE, LARRABEE, STUBBS. WOODS, CALLAHAN.

Chemistry. — Associate Professor HILLS, Assistant SMITH.

Crown and Bridge Work and Metallurgy. — Assistant Professor COOKE. 32 lectures.

Neurology. — Instructor E. W. TAYLOR. 4 lectures.

Materia Medica and Therapeutics. — Professor BRIGGS, 32 lectures; Assistant RODGERS, 32 recitations.

Dental Pathology. — Professor BRACKETT. 32 lectures.

Surgical Pathology and Surgery. — Professor WARREN, Instructor MONKS. 14 lectures.

Mechanical Dentistry and Orthodontia. — Professor SMITH. 32 lectures.

Orthodontia. — Professor SMITH, 32 clinics; Assistant BAKER, 64 hours.

Mechanical Dentistry. — Clinical Instructor J. D. DICKINSON. 8 clinical lectures.

Mechanical Dentistry.—Clinical Lecturer STODDARD. 16 lectures and demonstrations.

Mechanical Dentistry, laboratory, Juniors.—Assistant Demonstrator CHASE, Instructors FORREST, MEADER. 544 hours.

Mechanical Dentistry, laboratory, Seniors.—Demonstrator CROSS, Instructors HAYDEN, ELDRED, BURNHAM, HALEY, BIXBY, GRANT, CHUTE. 496 hours.

Practical Dentistry.—Instructor UPHAM. 14 lectures.

Operative Dentistry and Dental Jurisprudence.—Clinical Lecturer CLAPP, 12 lectures; Instructor STARRATT, clinical assistant.

Operative Dentistry and Oral Surgery.—Professor FILLEBROWN, 32 lectures; Assistant BALDWIN.

Operative Dentistry.—Assistant Professor POTTER. 32 lectures.

Operative Dentistry.—Clinical Instructor WERNER. 13 lectures and demonstrations.

Operative Dentistry, infirmary, Juniors.—Assistant Demonstrator FARRINGTON, Instructors WHITE, D. W. DICKINSON. 448 hours.

Operative Dentistry, infirmary, Seniors.—Demonstrator McMEEKIN, Instructors PAUL, EDDY, BLAISDELL, PERKINS, TAFT, GRAY, HARDING, HOLMES, F. T. TAYLOR, BRADLEY. 624 hours.

Mechanical Treatment of Fractured Jaws, Cleft Palates, and other Deformities.—Instructor MORIARTY. 32 lectures.

Extracting and Anaesthesia (Demonstrations).—Instructors HART, SQUAREBRIGS. 160 afternoons.

The following tables show the work done in the different departments :—

OPERATIVE DEPARTMENT.

Surgical clinics by Professor FILLEBROWN.			
Necrosis	Number of cases	7	
Abscess	" "	11	
Antrum disease	" "	6	
Epulis	" "	6	
Hare lip	" "	3	
Cleft palate	" "	7	
Exsection of inferior dental nerve . . .	" "	1	

INFIRMARY.

No. of sets of teeth cleaned	1,781
“ patients treated for diseases of the teeth and gums .	3,097
“ fillings, gold	3,551
“ “ amalgam	2,097
“ “ cement	2,114
“ “ gutta percha	3,720
“ porcelain inlays	10
Total No. of patients treated	7,021
“ “ operations performed	21,557

MECHANICAL DEPARTMENT.

SERVICE TO PATIENTS.

Sets of artificial teeth	358
Sets of artificial teeth repaired	97
Cases of fractured jaws	48
Cleft palate appliances	8
Splints for cleft palates	3
Obturator and appliances for cleft palates	6
Appliances for nose	3
Plugs for antrum	4

Under the direction of Professor SMITH:—

Cases of irregularity treated and corrected	114
Orthodontia appliances	262
Articulated models of regulating cases	217

Under the direction of Asst. Professor COOKE and Dr. ELDED:—

Crowns and caps	107
Crowns repaired	11
Pieces of bridge work	18
“ “ “ repaired	6

MECHANICAL LABORATORY—PRACTICE WORK.

Sets of artificial teeth	320
Crowns and bridges	456
Porcelain tips	1
Porcelain inlays	17
Carved teeth models	36

At the close of the year the following men retired from the teaching staff: Drs. Moriarty, Bixby, F. T. Taylor, White, Haley, and Meader. Of these men Dr. Moriarty has given to the School the longest service. He was appointed Demonstrator of Operative Dentistry in 1889, Demonstrator of Mechanical Dentistry in 1890, and Instructor in the Mechanical Treatment of Fractured Jaws and Cleft Palates in 1897. He was a good teacher and a hard worker in the interest of the School. Dr. Bixby has served the School for eight years as Instructor in Mechanical Dentistry; Drs. Taylor and White for six and five years, respectively, as Instructors in Operative Dentistry; Drs. Haley and Meader for five and two years, respectively, as Instructors in Mechanical Dentistry. The service that these men have given to the School has been at a pecuniary sacrifice to themselves, and for these services we are much indebted. Dr. Forrest, who was appointed as Instructor in Mechanical Dentistry in 1899, was transferred to the Operative Department Instructor.

New appointments were made as follows : —

EVAN P. WENTWORTH, D.M.D., *Instructor in Operative Dentistry.*

BURT M. BRISTOL, D.M.D., *Instructor in Operative Dentistry.*

LESLIE H. NAYLOR, D.M.D., *Instructor in Operative Dentistry.*

The library and museum, under the direction of Dr. Boardman, have steadily increased in their usefulness to students and alumni. During the year 36 volumes have been added, making the total number of volumes 529. Of pamphlets there are 3,178. To the museum 81 specimens have been added.

Alumni Day was observed as usual with most gratifying results, a large number of graduates returning to take part in the exercises of the day and evening.

EUGENE H. SMITH, *Dean.*

THE VETERINARY SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — As Dean of the School of Veterinary Medicine, I have the honor of making the following report for the year 1900-01.

Nine new students registered for the year, two of whom had previously attended other veterinary schools, one being a graduate; a third was a graduate of Harvard College.

There were three students in the second class, six in the third, and two who took a fourth year in the school; thus making a total of twenty students, — five less than for the previous year.

There were ten applications for the degree: six from the Class of 1901, three from that of 1900, and one from the special list. Seven of these were successful, all having completed three years of study and passed our examinations in all of the required subjects of the entire three-year course. The degree, *cum laude*, was given to William Thomas Conway, of the Class of 1901.

One Faculty Scholarship of \$150 was awarded to Mr. William Thomas Conway, of the third class. Of the six new scholarships, of \$50 each, four were awarded, — to S. C. Babson and H. H. Delano, Jr., of the second class, and C. D. Huxtable and F. H. Carlisle, of the first class, all of whom had fulfilled the necessary conditions in a highly creditable and satisfactory manner.

With the changes in the methods of instruction, the addition to the teaching staff, and the list of subjects to be taught, as described at length in the report of last year, the work of the School began and was carried on throughout the year with great satisfaction, both to the Administrative Board and to the students.

Early in November, the Corporation passed a vote ordering that no new students in Veterinary Medicine be received until further notice from that board; that the Free Clinic should be discontinued at once; and that the Veterinary Hospital should be closed on June 1, 1901.

It was generally understood among us that this action had become necessary because the School had never received endowment, and that the Corporation were unable to carry longer the constantly accumulating deficits in the School's accounts, although they did intend to complete all contracts with the students already registered at the time when the vote was passed.

It was at first hoped that this officially declared necessity, threatening as it did the life of the School, would produce the required endowment, especially because of the University's long and unaided endeavor, in the face of many difficulties, to establish firmly a school of high grade; and because similar institutions in the Universities of Pennsylvania and Cornell had been handsomely taken care of in this respect. This hope had finally to be abandoned; for, although much sympathy and interest in the School were publicly and privately expressed, and a generous sum of money had been promised us by a few individuals, it was evident by midsummer that the required amount could not be obtained; and it became necessary to consider what should be done with the students during the quickly coming year, in view of the facts that we possessed no further means within ourselves of giving practical instruction, that several of the instructors had already resigned their positions, and that the heretofore well maintained interest of those remaining had been appreciably cooled.

It was finally decided that Harvard University would pay the tuition of the remaining students at the Veterinary Department of the University of Pennsylvania; and all but three went to that institution at the beginning of the new academic year. Two were transferred to the Medical School, and one entered another Veterinary School.

The Free Clinic at the Piedmont Street quarters was definitely closed November 22, 1900, with the expiration of the lease which had been paid for by the Visiting Committee; but the work was continued at the Village Street building until the end of the year, under the explicit understanding that the University should not be called upon to pay any expense that might be incurred thereby. The number of cases treated at the clinic up to the time that it was closed was fully up to the average of the previous year.

On June 1, the University's connection with the Hospital ceased.

On the departure of the students for Philadelphia, the resignations of the remaining instructors were sent to the Corporation; and the School was permanently closed, after a not uneventful or unworthy career of nineteen years.

CHARLES P. LYMAN, *Dean*.

THE VETERINARY HOSPITAL.

TO THE PRESIDENT OF THE UNIVERSITY :—

SIR,—As Surgeon-in-Charge of the Hospital of the School of Veterinary Medicine, I have the honor to submit the following report for the year 1900–01.

Albert J. Sheldon, D.V.S., was reappointed Assistant Surgeon to serve until June 1, 1901.

The following members of the Third-year Class were appointed House Surgeons :—

WILLIAM THOMAS CONWAY,
THOMAS STEPHEN SHEEHAN,
FRANCIS JOSEPH SULLIVAN.

In accordance with the recommendation of the Committee on Courses of Study and the vote of the Administrative Board, four series of practical exercises were added to the instruction heretofore given in the Hospital, as follows :—

Examination for Soundness	Dr. Osgood.
Bandaging and Apparatus	“ “ and Assistant.
General Stable Management of Sick Animals “ “ “	“ “ “
Auscultation and Percussion	Drs. Lyman and Delano.

Owing to the resignation of Dr. Leonard as Clinical Instructor, Dr. Delano was appointed Assistant in Clinical Medicine; in other respects the clinical instruction was given as heretofore by Drs. Osgood, Howard, and Sheldon.

An unusually large number of surgical operations were performed in the presence of the class, the students in all cases assisting under the immediate supervision of the Hospital Staff. As heretofore the interest of the students in this part of their course and the results of their work were most satisfactory.

The number of cases treated in the Hospital and the “ Out Clinic ” was proportionately the same as for the previous year. The receipts were, however, much reduced by the operation of the Corporation’s vote in November, 1900, to close the Hospital on June 1st, 1901, and to receive no subscriptions after the date of the vote. In accordance with this vote the Hospital passed out of the control of the Corporation on June 1st, 1901.

The value of the Hospital as an appendage to the Veterinary School, ever since the establishment of the latter in 1883, has been manifest in the generous opportunities which it gave the students for practical work, and for extended observation in connection with their courses of study; and it has received recognition from all interested parties. But its large and constant public service in alleviating the sufferings of all classes of domestic animals, and in extending their period of usefulness, has been equally manifest and important, although such service could not be expected to receive general recognition.

In taking leave of the Hospital work as a department of the Veterinary School and of the University, and in severing the always pleasant relations which I have had with the allied departments of University work, I feel that the Hospital has proved its value, and that it has a creditable record; that its abandonment has been considered necessary, will be regretted by none more deeply than by those who through official supervision of its work have best known the scope of its service.

FREDERICK H. OSGOOD,
Surgeon-in-charge.

THE BUSSEY INSTITUTION.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I respectfully submit the following report on the Bussey Institution for the year 1900–01.

As has been the case in several of the years last past, the number and character of the students attending the School of Agriculture and Horticulture during the year has shown decided improvement.

Instruction was given throughout the year in Agriculture, Horticulture, Agricultural Natural History, Cattle and Cattle Feeding, Agricultural Chemistry, and Chemical Analysis, by Messrs. Hersey, B. M. Watson, E. W. Morse and Storer.

Thirty-four students were in attendance, of whom 23 were regular students seeking the degree of Bachelor of Agricultural Science, as given on recommendation of the instructors at the Bussey Institution; 5 were students of Landscape Architecture in the Lawrence Scientific School aiming at the degree of Bachelor of Science, and 6 were Special Students not candidates for any degree.

The degree of Bachelor of Agricultural Science was conferred upon two candidates at Commencement.

One Bulletin by Messrs. Morse and Hersey was published. It was entitled “On the Power of Some Peach Trees to Resist the Disease called ‘Yellows.’”

There is urgent need of room for the proper conduct of the regular classes of the school, and a library building is needed also in which books relating specially to Agriculture and Horticulture may be kept in proper order and be allowed to accumulate with some chance of their permanent preservation.

F. H. STORER, *Dean.*

THE LIBRARY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,— I have the honor to submit my fourth annual report on the Library, covering the year 1900–01.

In my last three reports I stated as clearly and as forcibly as I could the Library's need of a new building or of an enlarged and improved building. The lack of this enlargement cramps the Library's activities on every side, abridges its usefulness, and makes the work of administration more difficult and in some degree less efficient. Every year that relief is delayed the problem becomes more serious. Every year more varied service is rightly demanded of us, and we are less able to render it. Every year our accessions increase,* involving more and more work on the part of the staff; but the staff has not been and cannot be enlarged because of the lack of both money and room.

Further delay means increasing and probably permanent injury to the Library, and may lead to the adoption of a policy of splitting up the great Central Library into numerous departmental collections. It is now so long that the Library has been unable to offer to professors and advanced students the facilities they need for the use of its books, that each department, in planning for the improvement of its work, is inclined to accept as permanent the present crippled condition of the Central Library, and to demand a special collection in a separate building for its individual use. Under present conditions such separate collections are in fact necessary, but if this should lead to the general installation of extensive special collections in separate departmental buildings, the gradual disintegration of the Central Library is likely to follow. The separation from the main library of some of the scientific and technological divisions may possibly be found to have enough advantages to outweigh the general disadvantage; but to drift into a policy that involves the separation from the general library of such subjects as Education, Philosophy, or any division of Literature or History, would be a calamity that would affect unfavorably the whole educational method and standing of the College. For the study of such subjects, interwoven as each necessarily is with countless others, a central comprehensive library should

* The accessions of the last *three* years are about equal to the accessions of the previous *five* years.

always remain the headquarters; but it cannot continue to be so in fact, and to be so regarded, unless it can furnish to each department the opportunity to make use of its material to the best advantage.

For relief, it seems to me, we can only look to some lover of learning who unites generosity toward the College and a broad-minded liberality with the possession of large resources; for it is evident that our needs are really two—ample means to build a library as perfectly adapted to its purpose as good design and wise expenditure can make it, and an increased endowment to meet the necessarily larger cost of administration in the larger building.

As a preliminary measure, the Library Council has asked the Corporation to appoint a committee to make a careful study in detail of what a new or enlarged building should provide, what rooms and of what size, how related, and for what purposes. This committee, it is expected, will also collect, examine, and digest useful ideas embodied in recent library buildings in other places, and will call for suggestions from members of the Faculty here. Such a study of the elements desired naturally precedes the architect's study of how they may be combined in a building, and should result in a definite and detailed statement of what the Library needs.

A good beginning has been made on a collection of photographs and other prints illustrating the history and topography of the College. The material of this kind already on hand, but scattered, has been brought together and mounted on cards of two uniform sizes, 18 by 14 inches and $9\frac{1}{2}$ by $6\frac{1}{2}$ inches, and additions have been made as opportunity occurred. A full set of the photographs taken for the Class of 1858, both portraits and views, being offered for sale at a moderate price, was bought; an incomplete duplicate album of 1885 had lately been given to the Library by the Class Committee and could be broken up; a number of views taken in 1875 were found for sale at a nominal price and were secured; and other smaller lots have turned up from time to time. The collection now numbers 721 cards. The Class Albums preserved in the Harvard Collection contain a great variety of interesting views and portraits which, however, must not be removed; but I should be very glad if duplicate copies of the class albums might some time find their way to the Library and provide further material for this systematic collection. The smaller cards are arranged like the cards of a card catalogue in large drawers, and are numbered so as to fall into a natural order and keep all views of the same building together. The larger cards are kept in portfolios, arranged in the same order. The collection of views is followed by a collection of portraits of Harvard men, and for

the increase of this, also, the Library must depend in part on the kind coöperation of its friends. The members of the Harvard Camera Club have contributed many current pictures; and I hope to receive from all photographers, both amateur and professional, assistance in rounding out the collection. Views, both old and new, of the College buildings and of the surroundings of the College, portraits, groups, and snap-shots of athletic contests or of passing events are all desirable.

At the time of my last report the final steps had not been taken in the prosecution of the case against Dr. Charles E. Cameron, charged on two counts, stealing book-plates from the Library, and having stolen property in his possession. Dr. Cameron pleaded guilty, and his case came up for judgment on November 8, 1900, when, the greater part, but not the whole, of the book-plates having been restored to the Library, the persons to whom he had sold or given the plates having been settled with by Dr. Cameron in a manner satisfactory to them, as witnessed by their signed statements delivered to the Library, and the expenses incurred by the College for rebinding of books, for employment of detectives, and for legal services (amounting in all to \$433.77) having been covered by payments to the College on Dr. Cameron's part, the College consented to leave the matter of the sentence to be imposed entirely to the District Attorney and the Court. The Court accordingly sentenced the defendant on one of the two counts to pay a fine of \$150 (in addition to the amount of restitution he had made to the College and to the purchasers of the plates), and put the other count on file (to be brought up again if desirable later), Dr. Cameron being required to recognize personally in the sum of \$1,000 for his appearance. I make this detailed statement of the matter in order that there may be no misunderstanding in regard to the nature of the case and its results, the College being under obligation, in my opinion, to protect the interests of libraries and collectors to the extent of its power. I ought to add that a number of the stolen plates have not yet been traced and recovered, and collectors should be on their guard against accepting Harvard plates of the older engraved varieties which do not bear unmistakable evidence of having been honestly acquired.

No new numbers of the Bibliographical Contributions have been issued, but material for four new numbers is in hand and I hope may soon be published. A fund of from five to twenty-five thousand dollars could be usefully applied to the support of this series and of other publications which the Library will desire to issue in the future.

The accessions to the University Library for the year, and the

present extent both of the Gore Hall collection and of the several departmental libraries are shown in the following table :—

ACCESSIONS.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library)	13,797	387,097	250,000
Law School	5,902	62,523	6,421
Divinity School	639	30,624	7,011
Medical School	37	2,316	..
Dental School	36	529	3,178
Bussey Institution	80	4,180	10,950
Museum of Zoology	862	33,329	25,819
Peabody Museum	418	2,623	2,703
Astronomical Observatory	361	10,077	16,306
Gray Herbarium	154	7,809	5,886
Arnold Arboretum	856	8,264	..
Twenty-seven Special Reference Libraries .	1,684	26,517	..
Total	24,826		
Deduct, transfers between Gore Hall and Department Libraries	588		
Total	24,238	575,888	328,174

Of the 13,797 volumes added to the Gore Hall collection, 7,061. came by purchase or exchange, 1,151 as the result of binding serial publications, and 836 by binding pamphlets separately, while the remainder, 4,749 volumes, were received by gift.

15,367 pamphlets have been received, 14,235 by gift, and 1,132 by purchase or exchange. 589 sheets of maps have been added to the map collection, which now numbers 19,668 sheets.

The number of volumes added to Gore Hall is less than in the two previous years, but exceeds the average of the ten years preceding (10,731) by about 3,000 volumes. In fact, the total number of volumes received by the Library in the last *three* years is only a little less than the total of the previous *five* years.

The total gifts to the College Library during the year 1900-01 and the previous five years have been as follows :—

GIFTS TO THE COLLEGE LIBRARY.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Volumes	3,903	5,048	2,646	7,096	11,360	4,749
Pamphlets	8,908	8,427	11,365	12,448	11,072	14,235
Totals	12,811	13,475	14,011	19,544	22,432	18,984

The accessions by gift and purchase to the University Library as a whole (including, since 1890, the special reference libraries, or, as they have hitherto been called, the laboratory and class-room libraries) have been as follows during the last twenty-one years :—

	Volumes.		Volumes.		Volumes.
1880-81 . . .	9,804	1887-88 . . .	16,468	1894-95 . . .	16,892
1881-82 . . .	9,129	1888-89 . . .	12,253	1895-96 . . .	19,659
1882-83 . . .	9,818	1889-90 . . .	16,051	1896-97 . . .	16,371
1883-84 . . .	12,360	1890-91 . . .	16,477	1897-98 . . .	19,707
1884-85 . . .	14,558	1891-92 . . .	14,767	1898-99 . . .	25,414
1885-86 . . .	9,191	1892-93 . . .	23,282	1899-00 . . .	29,626
1886-87 . . .	11,924	1893-94 . . .	16,892	1900-01 . . .	24,238

It will be noticed that the number of volumes now in the College Library (387,097) is less than the corresponding number stated last year. It has been recognized for some time that the figures as given from year to year were in excess of the fact, but just how far the error had gone was not known until this autumn, when an actual count of the still unclassified portion of the Library was made. The older shelf-lists of the classified part were also recounted and corrected, and the true total thus ascertained. The previous figures were based on an estimate made in 1878, to which had been added from year to year since that time the total number of volumes received annually. But up to three years ago no allowance had been made, so far as I can learn, for the considerable number of duplicates rejected, sold, or exchanged, volumes worn out, and books transferred to other departments, so that it is not surprising that the total as reported grew to be more and more in excess of the actual number until an error of about 24,000 volumes had accumulated. The number as now given can be taken as a pretty close statement of the actual contents of the Library. The number of unbound pamphlets, likewise less than last year's statement, is an estimate based on the measurement in feet of the pamphlet files, and the supposed contents of pamphlet boxes on the shelves.

Among the gifts received during the year are the following: A bequest of \$10,000 under the will of Roger Wolcott, of the Class of 1870, late Governor of Massachusetts, to be added to his previous gift of \$10,000 establishing the J. Huntington Wolcott Fund for "the purchase of books of permanent value, the preference being given to works of history, political economy and sociology"; a gift of \$500 from the Saturday Club of Boston for the purchase of books; a gift of \$300 from J. Harvey Treat, Esq., of Lawrence, for the purchase of works relating to the catacombs and early Christian

antiquities ; a gift of \$500 from Mrs. Emil C. Hammer, of Boston, in continuation of an equal sum given the previous year, the whole amount of this later gift being available for books relating to Scandinavian literature and history ; gifts amounting to \$3,750 from Professor A. C. Coolidge, to pay for books bought at his desire relating to the history of Poland and other Slavic countries, and to the history of the Ottoman Empire, including over three hundred of the *Zeitung*en or contemporary accounts of the Turkish wars in the seventeenth century ; \$50 from Mr. Harold J. Coolidge, the first of five annual gifts of the same amount for the purchase of books on China ; \$300 received through Professor George P. Baker from nineteen subscribers, graduates of the College in classes from 1853 to 1900, toward the buying of an extraordinary collection of 219 contemporary engraved portraits of David Garrick costing about \$400, intended by the subscribers to be a memorial to the late librarian, Justin Winsor, whose manuscript unpublished life of Garrick remains in possession of the Library.

Professor Wiener spent a part of last summer in the Slavic parts of Southern Europe and visited in particular most of the towns where Slovak literature has flourished. He had the good fortune to secure the library of Lombardini of Sollein, a Slovak writer, who died in 1897. To this he added other Slovak publications as he found them in Turocz St. Martin, Pressburg, Tyrnau, and elsewhere, until he had finally formed a collection of 123 volumes and 1,567 pamphlets, including many rare periodicals, and much folklore material, a collection of this literature probably larger and more complete than any other in existence, except that owned by L. Rizner, a prominent Slovak bibliographer. The books came to the Library as the gift of Professor A. C. Coolidge.

Mrs. John E. Hudson, of Boston, presented to the Library over 300 volumes from the library of her husband, of the Class of 1862, and permitted us to pass on to the libraries of the Classical Department, of Radcliffe College, and of the Harvard Union, a large number of other volumes which were not needed on our shelves. From the library of Mr. Henry C. Warren, of the Class of 1879, who died January 3, 1899, the College Library has received 230 volumes and 116 pamphlets, and the Sanskrit library in Warren House has received about 225 volumes.

In my report last year I mentioned the acquisition of a set of the Oxford Newdigate prize poems, complete from 1822 to 1900 with one exception, the poem of R. C. Sewall in 1825, which I was led to believe had never been printed. It so happened that at the time this

collection came to us Mr. Robert Sewell, of London, the nephew of the prize winner, was visiting in Cambridge. The gap in our set was mentioned to him and he undertook to make enquiries on his return to England. His search was at first without result, for neither the poet's brother, the present Warden of New College, nor his sisters possessed copies or remembered seeing the poem in print; but his endeavors were at last rewarded by the discovery of a fresh uncut copy, which he has very kindly presented to this Library.

The money given by the Saturday Club has not yet been spent, but it will be used, at least in part, for the purchase of early editions of American authors, many of whom were once members of the Club. Gifts of this kind which can be used for some purpose lying a little outside the ordinary field of current expenditure to which the regular income of the Library has to be devoted, are very acceptable, and can always be employed to good advantage.

The Library Council was this year again able to make a special appropriation for "expensive books," for books, that is to say, too costly to be bought from the regular departmental appropriations without seriously abridging the power to satisfy the ordinary current demands. The more important works acquired in this way are the following:—the publications of the London Topographical Society, of the *École Supérieure des Lettres* of Algiers, of the *École des Langues Orientales Vivantes* of Paris, and of the Manchester Literary Club; also (to complete imperfect sets) publications of the *Accademia dei Lincei*, and of the Naples Academy, the *Fonti per la Storia d'Italia* of the Istituto Storico Italiano, and the *Documenti di Storia italiana* published by the Reale Deputazione sugli Studi di Storia Patria of Tuscany; portions of the *Miscellanea di Storia patria* published by the Lombard committee, and of the *Miscellanea di Storia veneta* of the Venetian committee, to complete the sets received in the Riant library; among long periodical or serial sets, the *Annals of the National Library of Rio de Janeiro* (21 vols.), the *Bibliothèque de Linguistique et d'Ethnographie américaines*, the *Collection linguistique américaine* (23 vols.), *Revue africaine*, 1856–1900 (44 vols.), *Zeitschrift für afrikanische und oceanische Sprachen*, 1895 to date, and *Vorontzof's Archives* (in Russian), 1870–95 (40 vols.); the orchestral scores of Wagner's *Tannhäuser* and *Fliegende Holländer*, Peñañel's *Monumentos del Arte mexicano antiguo*; Moreau's *Collection Caranda*; Katona's *Historia critica Regum Hungariae*, 42 volumes, 1779–1817; an early edition (1582) of the romance of *Meliadus de Leonnoys*; and two Aldines, the *Plutarch* of 1509 and the *Pausanias* of 1516. We have also bought

a batch of letters, the correspondence of Sir Frederic Madden relating to the romance of *Havelok the Dane* (supplementing other portions of his correspondence and his papers concerning early English literature already in the possession of the Library, bound in twelve volumes); some letters from William Weeks, of the Class of 1775, while serving as paymaster in the Continental army, and a notebook of his brother, Clement Weeks, of 1772, containing interesting matter in regard to the College "rebellion" in 1766; one hundred and thirty-nine French plays (1785-1800) bound in twenty volumes; several collections of broadside ballads; the first volume of Claudin's sumptuous *Histoire de l'Imprimerie en France au XV^e et du XVI^e siècles*; the *Memoirs of the Geological Survey of Great Britain* (to complete our set); several early editions of Byron and Browning, and some fifty volumes of American literary annuals or gift books, many of which contain early and fugitive contributions from well-known authors. A special appropriation of the Council, made at the suggestion of Mr. Potter, provided for the purchase of many dictionaries and grammars of the less known languages, in which the Library was seriously deficient, and an appropriation for the same purpose will be continued another year. The library of the Museum of Comparative Zoölogy already has many books on Polynesian tongues incidental to its special collection relating to Polynesia, and these will, of course, not be duplicated.

COLLECTION OF COINS.

Dr. Malcolm Storer, the Curator of Coins and Medals, reports the addition to that collection of 138 pieces by gift and of 11 by purchase. For 77 of these the Library is indebted to Robert C. Winthrop, Esq., 1854. The special collection of medals struck in honor of Harvard men has been increased by medals of James Monroe, *h.* 1817; R. B. Hayes, *l.* 1845; Charles Sumner, 1830; Theodore Roosevelt, 1880; and the John D. Long, 1857, medal for debate, in gold, given by the founder, R. C. Surbridge, 1889.

SPECIAL REFERENCE LIBRARIES.

These libraries have been spoken of hitherto as Laboratory and Class-room libraries, but the second term, always of doubtful appropriateness, is no longer justified, since most of these collections, at first installed for convenience in or near class-rooms, have since been removed to other quarters. These libraries serve a number of different purposes; some provide simply a few manuals and peri-

odicals, such as laboratory workers find it necessary to have at hand; others contain somewhat extensive collections for the use of advanced students, in some cases duplicating what is to be found in the main library, in other cases supplementing the Gore Hall collection; others again provide many copies of books in much demand in the larger elementary courses in economics, history, etc.; but all agree in being limited to a *special* field and in being administered as *reference* libraries, that is, in not allowing books to be taken out, — except that books may be borrowed over night from Harvard Hall.

The present extent of these libraries is as follows: —

SPECIAL REFERENCE LIBRARIES.	Perma- nent.	On Deposit.	Totals.
1. Chemical Lab. <i>Boylston Hall</i>	541	1,053	1,594
2. Physical Lab. <i>Jefferson Phys. Lab.</i>	28	367	395
3. Botanical Lab. <i>University Museum</i>	585	124	709
4. Geological Lab. <i>Do.</i>	118	. .	118
5. Mineralogical Lab. <i>Do.</i>	469	229	698
6. Phys. Geography Lab. <i>Do.</i>	347	176	523
7. Zoölogical Lab. <i>Do.</i>	266	. .	266
8. Classics. <i>Harvard Hall 3</i>	3,439	143	3,582
9. History. <i>Harvard Hall R. R.</i>	2,143	17	2,160
10. United States History. <i>Harvard Hall R. R.</i> . .	883	8	891
11. Political Economy. <i>Do.</i> . .	1,142	1	1,143
12. Social Questions. <i>Do.</i> . .	835	6	841
13. Child Memorial (English). <i>Warren House</i> . .	4,037	90	4,127
14. Lowell Memorial (Romance). <i>Do.</i> . .	534	2	536
15. German. <i>Do.</i> . .	503	. .	503
16. French. <i>Do.</i> . .	2,453	. .	2,453
17. Sanskrit. <i>Do.</i> . .	893	13	906
18. Semitic. <i>Sever 7</i>	1,102	. .	1,102
19. Mathematics. <i>Sever 22</i>	366	80	446
20. Mining and Metallurgy. <i>Rotch Laboratory</i> . .	1	14	15
21. Engineering. <i>Pierce Hall</i>	3,886	1,000	4,886
22. Music. <i>Holden Chapel</i>	167	. .	167
23. Philosophy (Psychol. Lab.). <i>Dane Hall</i> . . .	559	40	599
24. Fine Arts (incl. Gray and Randall Coll.). <i>Fogg Museum</i>	808	. .	808
25. Architecture. <i>Robinson Hall</i>	259	. .	259
26. Preachers' Library. <i>Wadsworth House</i> . . .	94	. .	94
27. The Study. <i>Phillips Brooks House</i>	59	. .	59
Totals	26,517	3,363	29,880

The four libraries of History, United States History, Political Economy, and Social Questions, brought together in the Harvard Hall

reading-room, now number over 5,000 volumes, and are of essential service to several of the large elementary courses, whose members have to read portions of a considerable number of standard authorities. For this use the Gore Hall Library, with its small number of duplicates, is altogether inadequate, and Harvard Hall is hard pressed, with its hundred seats, to accommodate the large numbers that depend upon it. Some larger room should be provided as soon as possible. Experience in this room and in Gore Hall shows that, while books as a whole may with great advantage to the student be kept on open shelves freely accessible to all, a fairer and more equal use is secured by taking the few books that are in special demand from week to week, and keeping them for a few days behind the counter, to be given out by the attendant on demand, for use in the room. The recorded use of the 928 volumes so reserved in the Harvard Hall reading-room in the course of the year amounted to 28,496. An extension of the method to a still larger number of books would have been desirable, but the limited space available behind the attendant's desk prevented. This room is not open in the evening, and books are accordingly loaned for over-night use at five o'clock. The number of these loans was 13,566. A record of but one volume missing at the end of the year bears witness to good management on one side and to a spirit of honesty and a willingness to comply with rules on the other.

The Lowell Memorial Library, owing to an unfortunate delay, does not yet include in its count of volumes the books from Mr. Lowell's own library, but the books are now entirely ready to be moved over, and the transfer will be made immediately. A handsome engraved book-plate has been designed for this library by Mr. B. G. Goodhue, at the expense of the Class of 1872.

The libraries in Warren House are intended for advanced students only and admission is by card. Cards were given in the course of the year to 280 students, and the privilege of access to these libraries was no doubt highly prized by these men; but the rooms might be used very much more than they are without diminishing the quiet and privacy which make them attractive.

The Engineering Library appears for the first time in the list of special reference libraries, having previously been included among the departmental libraries enumerated on page 200, but the present relations of the Scientific School and the College (both being under the one Faculty of Arts and Sciences), as well as the actual relations of the library to the College Library, make this the appropriate place in which to class it. The transfer of the books from Lawrence Hall

to their new rooms in Pierce Hall makes it impossible at the moment to state accurately either the relative number of "deposited" and "permanent" books or the total number of volumes in the library.

USE OF BOOKS IN THE COLLEGE LIBRARY.

The following table shows the use of books at Gore Hall in 1900-01 as compared with previous years:—

USE OF BOOKS.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
1. Books lent (excluding over-night use.)	60,346	59,781	59,611	61,272	63,005	63,712	63,673
2. Used in the building (Recorded use only.)	23,500	22,230	22,965	27,017	25,595	23,715	24,180
3. Over-night use of reserved books . . .	20,985	8,594					
Totals	104,831	90,605	82,576	88,289	88,600	87,427	87,853
4. Over-night use of Harvard Hall Reading-room			9,288	11,938	12,046	13,460	13,566

Lending reserved books for over-night use ceased in 1896, when the reading-room began to be kept open through the evening.

Of the constant use of the reserved books in the reading-room, and of the collections of reference books, periodicals, and United States documents, freely accessible to all, no record is possible.

The extent of these open collections and their growth is shown in the following table:—

OPEN COLLECTIONS.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Bound Periodicals	3,619	3,813	3,275	3,275	3,140
Reference Books	3,822	3,853	4,142	4,224	4,235
Reserved Books	8,090	8,117	8,344	10,134	10,557
U. S. Documents	3,465	3,592	3,664	3,887	4,698
Total	18,996	19,375	19,425	21,520	22,630

Complaints having been made that the reservation of books in the reading-room for the benefit of students occasionally interfered unnecessarily with the work of officers of the College who might have occasion to consult the books, and who could not do so conveniently at the Library, Mr. Briggs, the Superintendent of the reading-

room, sent out in January a circular from which I copy the following paragraphs: —

“In the case of all books reserved in the reading-room at the request of officers of the University, the Librarian wishes me to distinguish as far as possible between those which it is essential to have always at hand there, and those which the instructor desires his students to use, but does not consider of primary importance; to distinguish, that is to say, between books which the instructor requires his men to consult and which he in effect promises shall always be accessible to them in the reading-room, and those which are not so constantly in demand or so essential when they are wanted. It is proposed that books of the latter class may be borrowed for short periods by officers of the University (and by them only), if there does not seem to be a pressing demand for them at the time. It is also proposed to remove cause for complaint on this ground as far as possible by purchasing additional copies of books which are constantly wanted in the reading-room, and a special appropriation was made last year and has been repeated this year for the purchase of such duplicates.

“I enclose with this circular a number of blanks to be used in requesting to have books reserved. Please indicate by an asterisk those titles which you consider should always be accessible in the reading-room.

“I am directed by the Librarian to say that it is not the intention of the Library administration to change the present system of reserved books or to abridge the usefulness of the reading-room, but only to adjust our present system better to the convenience and necessities of officers of the University. To accomplish this I have to rely upon your coöperation in keeping me informed as promptly as possible in regard to the books which you wish to have reserved and in regard to the period for which they are needed.”

Instructors were, at the same time, asked to examine during the mid-year period and from time to time thereafter the books reserved at their request, with a view to returning to their places without delay those that were no longer needed. I think there has been no further cause of complaint on this ground.

The books shelved in the reading-room, together with those in the various special reference libraries in Harvard Hall, Warren House, and elsewhere, amount altogether to about 52,500 volumes to which direct access can be had by all students to whom they are of value. In addition, the 2,500 or more volumes in the library of the Harvard Union, a collection mainly of literature, biography, travel, and sport, with a good supply of reference books, is open to a large number of students.

During the year 26 volumes have disappeared from the shelves of the reading-room, a smaller number than usual, but large enough to

give constant cause for anxiety and watchfulness. The following notice, posted in the reading-room, attempts to express the purpose of the room and the spirit in which it should be used :—

“The books of the reference and reserved collections are placed on open shelves in the reading-room, that they may be *freely* and *equally* accessible to all readers.

“These books are on no account to be removed from the reading-room except by officers of the Library, and they must be used in a spirit of fairness and with a due regard for the rights of others.

“*A reader who fails to conform to these conditions is necessarily excluded from the Library. His name will be posted in the reading-room.*”

The great majority of the students willingly comply with these conditions and recognize the fact that rules for the use of the Library are made purely in their interest, but there are always some persons too thoughtless or selfish, and a very few so dishonest, that they are ready to abuse the privileges of a room so administered.

Cards of admission to different sections of the book-stack continue to be given, on recommendation of an instructor, to all advanced students who need to go directly to the shelves for purposes of investigation in connection with their work. Such students have the same facilities for the examination and study of all the resources of the Library, in their chosen departments, that the officers of instruction enjoy. The use of these cards of admission to the book-stack is shown in the following table :—

ADMISSION TO THE BOOK-STACK.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
History	68	63	66	54	51	78	112	81
Science	27	9	4	11	33	43	30	36
Art and Archaeol. (including Music)	8	5	11	18	34	38	33	33
Literature	63	58	63	64	90	90	85	74
Classics	45	44	41	41	52	60	70	58
Philosophy	17	12	6	4	11	19	19	22
Theology	3	3	1	1	3	5	1	1
Political Economy	15	15	12	4	9	12	13	13
Education	3	..	1	5	2	8	4	7
Geography . . . . .	..	..	..	8	14	2	3	9
Publ. of Learned Societies . .	..	..	..	..	..	..	..	16
Total	249	209	205	210	299	355	370	350
Times of use	5,974	4,352	4,601	4,381	5,750	5,826	6,898	6,067

The number of individuals admitted was 257, not 350, because the same person often receives permission to use different parts of the book-stack.

The number of students who take books from the Library, and their relation to the whole number connected with the Cambridge departments of the University, is shown in the last three years and at previous ten-year intervals in the following table :—

STUDENTS OF	1874-75.		1884-85.		1894-95.		1898-99.		1899-00.		1900-01.	
	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.
Divinity . . .	20	16	26	26	50	40	26	26	27	27	28	24
Law	139	63	153	122	404	176	551	302	613	241	647	246
Scientific .	29	21	28	21	308	144	415	273	495	218	507	234
Resident Grad.	55	18	70	52	242	204	308	267	313	289	327	294
Senior Class .	152	109	191	170	327	318	369	341	310	257	388	308
Junior Class .	159	96	234	216	348	335	335	309	392	311	380	302
Sophom. Class	208	124	256	220	425	323	508	446	508	380	536	424
Freshm. Class	197	108	255	205	399	236	471	381	498	308	537	364
Sp. Students .	. . .	. . .	. . .	. . .	168	127	168	143	194	145	151	112
Total . . .	959	555	1213	1032	2671	1903	3151	2488	3350	2176	3501	2308

These figures are subject to rather remarkable fluctuations from year to year for which it is difficult to assign a cause. The percentage of borrowers has varied within five years from 79 to 94 per cent. in the Senior Class, from 79 to 92 per cent. in the Junior, from 56 to 87 per cent. in the Sophomore, and from 56 to 80 per cent. in the Freshman Classes. These figures do not mean, however, that so large a number of students (482 out of 1,992 undergraduates in 1900-01, about 24 per cent.) made no use of the Library. Most of them, probably all, used the reading-rooms and special libraries; but it is to be regretted that so many should have been satisfied with this, and not have been tempted to extend their reading beyond the requirements of their College work. This is particularly true of the students in the Scientific School, only 45 per cent. of whom in each of the last two years have had occasion to borrow books from the College Library. These students have a reference library of technical books in their own building conveniently placed with respect to the laboratories and class-rooms in which most of their work is done; so that their daily required work does not bring them

to the general library. It would be interesting to know whether, if the technical books which they have to use were placed under the roof of the College Library and made equally accessible (though not so near at hand), the range and breadth of their reading would be increased, and to enquire whether, if this were the case, the more liberal culture and the broader outlook gained would improve or injure the character of their professional training. Students in other professional schools show the same tendency to neglect the opportunities which the College Library offers; but both Law and Medical students are older, and have already had the advantage of a period of more varied work in College. Divinity students, on the other hand, although they have at their own school a library which is far from being confined to a narrow field, seldom fail to make good use of the College Library as well.

The use of the Library by students of Radcliffe is shown in the following table. In our present building only very meagre opportunities for reading can be afforded to Radcliffe students, but a messenger comes to the Library daily to take to Radcliffe College books sent for by the students. Since the lending of reserved books ceased in 1896, and with the growth of Radcliffe's own library, borrowing from the College Library has naturally declined.

BOOKS LENT TO RADCLIFFE.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Borrowers	108	156	155	167	146	137	121	148
Books borrowed . .	1,162	1,672	1,502	1,320	1,191	1,273	1,125	952

In the course of the year the temporary use of the Library has been granted to 131 persons not connected with the University, who have come to Cambridge for purposes of study. As in other years frequent applications for the loan of books have been received from other libraries, especially college libraries, and from scholars in distant parts of the country, and the Library has sent away 744 volumes in response to these requests. This number is much larger than in any previous year, but no instance of loss or injury has occurred, and it is thought that the convenience of college officers and of other scholars in Cambridge has not been interfered with by the temporary withdrawal of these volumes.

The Sunday use of the reading-room is shown in the following table. The room is open, to readers only, every Sunday in term-time from one to half-past five in the afternoon.

SUNDAY USE.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Sundays open . . .	37	36	24	35	35	35	35	35
Users	3,658	3,634	2,359	5,010	4,635	5,093	4,846	5,471
Average	99	100	98	143	132	145	138	156
Highest No.	136	131	140	227	297	260	236	226

SHELF DEPARTMENT.

Mr. Frank Carney, who has charge of the current work of the shelf department, reports 23,312 volumes permanently located in the stack during the year, 12,247 added to classes previously arranged, and 11,065 newly classified, making 282,997 volumes so placed of the entire Gore Hall collection.

The newly classified sections are the following :—

	Volumes.
Crusades	857
Japanese and Corean history and literature	395
Judeo-German (Yiddish) literature	1,501
Landscape design	150
Economics	8,162
	11,065

The bringing together of the books on the Crusades was desirable on account of the receipt of many works on the subject in the Riant library; Japanese and Corean was taken up as supplementary to the Chinese collection arranged the year before; the Judeo-German collection is made up of the recent gifts of Professor Wiener and Messrs. Morris and James Loeb; the books on Landscape Design, relatively few in number, could easily be collected for the use of the newly established courses in this subject, while the receipt of many park reports made it desirable to be able to assign them permanent shelf-marks at once; the arrangement of Economics has been in progress nearly a year and is the last of the large subjects which can be taken up under our present conditions, unless temporary storage-room for books should be found in some other building.

The books grouped under Economics include, besides general and special treatises on economic theory, works on population, immigration, railroads, monopolies, money, finance, taxation, banking, land tenure, public lands, commerce, tariff, statistics, economic and industrial history, and insurance; the various social questions, labor, temperance, pauperism, crime, prisons, socialism, communism, marriage and divorce, woman suffrage, etc., having been already brought together under Sociology, while other subjects that will group

themselves about Political Science are still untouched. We were glad to comply with a request from the Library of Congress for a copy of the synopsis of our classification, with notes, under Economics and Sociology.

The new count made of the Library this fall shows that we still have about 100,000 volumes not yet included in the new classification. Of these, 55,000 volumes were received before 1877, and the rest in the course of the last twenty-five years. The subjects covered by these 100,000 volumes are theology, general and ecclesiastical history, political science, education, the history and literature of most Oriental countries, bibliography, law, medicine, and some minor subjects.

The recount makes it possible to give now with greater accuracy and detail the conspectus of the contents of the Library which was printed in my report two years ago.

East Stack.

FIRST FLOOR.	Volumes.
British documents, including Journals of the Lords and Commons, Parliamentary papers of the early part of the century, and the regular sessional papers from 1830 to the present time	5,989
Canadian documents	721
Chinese documents	139
State and city documents of the United States	3,653
General periodicals, English, French, and German	7,175
	<hr/> 17,677
Pamphlets, estimated at	215,000
 SECOND FLOOR.	
Language	10,373
Classical Philology	5,033
Greek Authors	8,711
Latin Authors	6,753
Philological periodicals	2,330
Harvard Collection (for general use)	400
Cataloguers' reference books	4,429
	<hr/> 38,029
 THIRD FLOOR.	
American history	30,446
American literature	6,353
	<hr/> 36,799
 FOURTH FLOOR.	
English history	11,094
English literature	17,731
Crusades	857
	<hr/> 29,682

FIFTH FLOOR.

French history	9,122
French literature	9,329
German history	4,152
German literature	5,939
Austrian history	514
Dutch and Belgian collection	1,027
	<hr/>
	30,083

SIXTH FLOOR.

Slavic collection (history, literature, etc.)	5,409
Modern Greek collection	1,128
Italian collection	9,476
Spanish collection	2,967
Portuguese collection	282
Minor Romance collection	423
Scandinavian collection	2,872
Judeo-German collection	1,501
Turkey and the Eastern Question	2,514
	<hr/>
	26,572

STAIRWAYS AND PASSAGES.

Cyclopaedias	985
Angling	1,056
Carlyle bequest	470
Atlases	895
	<hr/>
	3,406
Maps 19,668 sheets.	

West Stack.

FIRST FLOOR.

Harvard University collection (printed material relating to the history of the University, its departments and officers). Archives (or MS. material) not included .	3,503
Chinese history and literature	506
Japanese history and literature	395
Directories	948
Registers	907
Newspapers (including newspapers in East Stack and in Perkins Hall) 1,392 bundles and	3,549
Unclassified books, — law, medicine, theology, ecclesiastical history, bibliography, Oriental history and literature, etc. — recent accessions (since 1877), 23,599; from the old library (before 1877), 52,940, altogether making	76,539
	<hr/>
	86,347

SECOND FLOOR.

Philosophy	8,407
Sociology (including various "Social Questions")	2,905
Economics	9,860
Educational reports	1,720

General science	360
Anthropology	208
Natural history	1,037
Zoölogy	2,113
Botany	1,494
Physical Geography	517
Geology	1,333
Mathematics	3,515
Astronomy	1,329
Navigation	369
Physics	2,077
Chemistry	1,984
Engineering	1,573
War	1,059
Unclassified books, accessions since 1877	11,631
	<hr/>
	53,491

THIRD FLOOR.

Folklore	8,690
Emblems	209
Archaeology	5,038
Fine Arts	6,283
Landscape Design	150
Music	5,081
Learned societies	6,109
Scientific periodicals	9,151
Geographical periodicals	1,571
	<hr/>
	42,232

Reading-Room, Delivery-Room, etc.

Reference books (not including those listed elsewhere) . .	2,560
Bound periodicals	3,140
United States Documents (including Niles and the Cong. Record)	4,698
In locked closets	655
Sparks cases. 24 rolls and loose MSS. and	343
	<hr/>
	11,396

Incidentally a number of minor improvements and readjustments in classification have been made. Austrian history and geography has been taken out from under German history, where it was at first placed as a matter of convenience, and is being arranged and renumbered by Mr. McDaniel as an independent group, a group presenting special difficulties to the classifier on account of the complexity of political and race divisions involved.

The distribution of the Riant books relating to European history and literature was the occasion of expansion and modification in Polish history, in Sigillography, which had not previously been included under Archaeology, where it seems to find an appropriate

place, and in our Tasso collection, to which the Riant library added some 148 numbers. The British "Rolls series" has also been rearranged, placing the volumes in the numerical sequence commonly used by bibliographers, instead of in a subject order which was attempted at the beginning. The bound newspapers and newspaper bundles stored in the basement of Perkins Hall have been set in order, so that demands for special papers can be satisfied, the bundles of unbound papers in particular having never been arranged since they were moved to Perkins in 1896.

Besides the volumes separately classified and entered on the shelf-lists, 4,586 pamphlets have been distributed into boxes on the shelves, according to subjects, in accordance with the plan adopted two years ago, which has been found to work satisfactorily and to require a minimum amount of labor. Of these, only 477 have been fully catalogued; for 1,317 a single slip for the official catalogue has been written, and 2,792 have been put away without any catalogue entry being made or needed. The classification by subjects has been pretty close, and from time to time, as the boxes fill up, their contents will be further sifted and bound; but binding of this kind should not be done in a hurry, since the more miscellaneous the contents of a volume the less useful it is.

In May the Library Council was asked to authorize a transfer of books between the Library of the Museum and the College Library, so as to bring together in one place or the other the full strength of the geological collection belonging to the University, making one complete collection in one place and another subsidiary duplicate collection in the other. The principle was evidently a sound one. The transfer to the College Library of the great Whitney Library of geology or any considerable part of it being impossible on account of lack of shelf-room in the College Library, the only question for the Council to consider was whether it would approve sending to the Museum those books from the College collection of which that Library did not already possess duplicates; and this it agreed to do, making the collection at the Museum substantially complete. A comparison showed that there were about 1,450 volumes common to both collections. The remaining 480 volumes and 18 boxes of pamphlets in the College Library were in the course of the summer withdrawn from the College Library and deposited in the Museum library. Biographies and a few popular treatises, however, have been retained here in spite of their not being duplicated in the other library. Palaeontology and Mineralogy, though included here under Geology, have not been touched.

The annual examination of the shelves, made by comparing the shelf-lists with the books in place, was made in the summer and covered over 320,000 volumes. A more cursory examination is in progress systematically throughout the year and is intended to correct misplacements, discover books that should be repaired, etc. In the course of both examinations 398 volumes were found on wrong shelves and 1,523 out of order on their proper shelves. 116 books are reported missing, 26 from the Reading-room and Delivery-room, and 90 from the Book-stack, to which only officers of the University and advanced students are supposed to have access. An inspection of the list of titles, however, does not indicate any systematic or intentional dishonesty, and most of the losses, especially from the stack, are doubtless due to carelessness on the part of regular users, and some possibly to still undiscovered misplacements. Rather less than half of these books usually re-appear without explanation during the next year and occasional ones turn up after an absence of five or six years. Of the 1,519 volumes reported missing during the last nineteen years, 592 have been recovered.

CATALOGUE DEPARTMENT.

The work of the Catalogue Department as compared with previous years is roughly shown by the following table:—

CATALOGUE WORK.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
Titles catalogued						
for College Library . .	7,564	8,990	9,974	12,276	12,738	24,169
for Departments, etc. .	2,668	2,320	3,026	2,087	2,378	3,361
Total	10,232	11,310	13,000	14,363	15,116	27,530
Cards added to Catalogue .	27,428	21,282	25,093	22,995	26,055	30,808

The problem of the Catalogue Department has been to deal with the largely increased accessions of the last three years without making any substantial addition to its own force, an addition which is forbidden at once by lack of working space and by lack of means. Books cannot, however, be allowed to pile up unrecorded, but must be kept moving till they find at least a temporary abiding-place, and some record must be made of them, so that we may avoid buying duplicates, even if we are not able to make the books at once freely accessible through the public catalogue.

We have adopted such abbreviated methods of work for the large collections lately received and for the less important of the other

current accessions as shall secure a record sufficient temporarily for these purposes, and such as can be completed in a systematic manner when the opportunity comes to do final work on these books. The books not of immediate importance, especially gifts, are given a temporary running number by which they can be found, and which serves to keep them in order, and each has a single author card written in the simplest fashion for the official catalogue.

The Riant collection has been similarly treated, except that those books which belonged in divisions of the Library already classified have been introduced to their permanent places, while the rest wait in the order of the numbers given them in the printed Riant catalogue. A copy of this printed catalogue has been marked with the numbers assigned on our shelves, and author cards have been inserted in the official catalogue. We are thus protected from ordering duplicates, any volume can be found when specially enquired for (though not through the general public card catalogue), and the more important parts of the collection, those relating to the Crusades, the Turkish wars, and European history, are on the shelves with other books on the same subject. It is work of this kind that swells the count of titles catalogued in the total above, about 6,900 titles being for Riant books, over 3,900 for other books, and 1,158 for pamphlets sent to boxes. Part of this work was done and done satisfactorily by Price Greenleaf men detailed by the College Office; each man, however, gives but few hours a week, and the combined labors of four men working the greater part of the year only amounted, measured by time, to the labor of one person for six weeks.

Partial work of this kind is the best we can do under present conditions, but the longer it is continued the greater becomes the mass to be taken in hand and finished at some later time. At present the accumulation of this partially catalogued work includes: books not yet classified but given a temporary running number, 3,260 titles; Riant books, some classified, others in a group by themselves, 7,579 titles; other books classified, but not yet fully catalogued, 1,474 titles; pamphlets in boxes classified by subjects, and scientific dissertations sent to the Medical School and other departments, recorded on official catalogue only, about 12,000 titles; total, about 24,000 titles. In addition to these should be mentioned some 1,500 volumes of pamphlets bound some years ago, very few of which have ever been taken up since binding, though many of the pamphlets in these volumes came from the old files of catalogued pamphlets, and in their old place could be easily found when asked for, but are now nearly inaccessible on account of the shelf-marks never having been added

on the catalogue cards. I do not see any prospect of being able to take up any of this work at present, except perhaps a few volumes of these bound pamphlets from time to time by means of extra help employed in the summer.

We should probably not have come out as well as we did this year in getting these arrears of work into orderly shape, if it had not been for my own absence on leave for four months during the winter. This released a certain sum of money and made it possible to employ some extra assistance beyond what was planned in the estimates for the year. Mr. Tillinghast observes in his report on the Cataloguing Department that, without exceeding the estimates, "more assistance of this class might have been utilized, but the employment of extra help is limited by lack of room and even more by the difficulty of preventing it from interfering with the regular work."

The work accomplished by means of this extra assistance included the arrangement of the collection of Judeo-German literature (1,501 numbers) given by Professor Wiener and Messrs. Morris and James Loeb; the writing of cards for the official catalogue (further cataloguing being postponed) for a large part of our collection of Proverbs and Emblems received by gift from Mr. John Bartlett some years ago, for Sanskrit and other Oriental works received in the bequest of Fitzedward Hall, '46, for the collection relating to the Jansenists in Utrecht bought two years before, and for many current accessions and exchanges; the cataloguing, either completely or partially, of some 440 uncatalogued volumes all belonging to the Library before the present public catalogue was begun and some even going back to before the fire of 1764 (these had been overlooked in the general recataloguing, but have been discovered by the reclassification now in progress); the cataloguing of a number of Russian and Bulgarian books by Miss Sanders, who has helped us before; the transfer to the public catalogue of many of the printed cards for articles in periodicals and society publications received during the last two years; the renewing of guide-blocks in the catalogue drawers; and many other things which had unavoidably fallen behind.

The coöperative cataloguing of articles in current periodicals and in the transactions of learned societies, in which the Library has been engaged for three years and a half, has gone steadily forward and begins to show interesting results. During this period the Library has contributed to the central bureau, the Publishing Board of the American Library Association, the manuscript or "copy" for 2,074 titles taken from the publications assigned us for analysing, and it

has received in return printed cards (four copies for each title) for these 2,074 titles and for 8,474 titles in addition, which had been catalogued by the other four coöperating libraries, making 10,548 titles in all. For these we paid at the rate of 3.3 cents per title, or \$348.08; but a rebate of 10 cents for each title catalogued by us, or of \$207.40, made our net payments \$140.68. The cost to us of the cataloguing is about 15 cents a title, or \$311.10 for the 2,074 titles, and the cost of sorting out and classifying the new titles received comes to about 5 cents apiece. If all the titles were of use to us, and were inserted in our catalogue, the total cost of the 10,548 titles would be:—

Cataloguing 2,074 titles	\$311.10	
Printed cards for 10,548 titles	\$348.08	
Less rebate of	207.40	140.68
Sorting and classifying 8,474 titles		423.70
Total		<u>\$875.48</u>

or an average of 8.3 cents per title for cataloguing and printing, which, compared with the 22 cents per title which we are now paying to the College printer for printing alone, to which must be added the cost of cataloguing and the cost of card stock, shows very plainly the advantage to be had from coöperative work.

As a matter of fact we do not use all the titles received; a few are taken from publications to which we do not subscribe, some we do not consider of sufficient importance for permanent preservation in the public catalogue, but these we are glad to put on file by themselves for at least temporary reference. Moreover, we have enough cards left over to send to the departmental libraries all titles of interest to each library, and to supply some of the professors with titles relating to their specialties.

The advantage to be gained from any scheme for the coöperative cataloguing of *books* is probably less, and the difficulty of so adjusting it as to give satisfactory results is much greater, but the above figures seem to me most encouraging. It should be remembered also that the cost of cataloguing books is necessarily greater than that of cataloguing periodical titles and that the titles themselves are longer, which increases the cost of composition, so that the actual difference in expense between individual and coöperative work would be less than that indicated above.

Plans for such coöperative cataloguing have been under active discussion for some time by the Publishing Board of the American Library Association and have several times seemed on the point of bearing fruit. At present it is likely that the Library of Congress

will be able to undertake as part of its regular functions a large part of the work which the Publishing Board has been interested in, and that Board will naturally take no further action until it is evident how far this can be carried.

The Library of Congress receives all books that are copyrighted in this country; it is also buying much more extensively than ever before, and is attempting to round itself out on every side. All its accessions it catalogues by means of printed cards, having on its own premises a division of the Public Printer's office. It has also begun to recatalogue its whole collection, and this too is done on printed cards. All of these cards it now offers for sale to other libraries under the provisions of the act which allows public documents to be sold at cost plus ten per cent. The price, which has to cover the cost of handling, has been fixed for the present at two cents for the first card and half a cent for each duplicate card for the same title. The actual distribution of cards has not yet begun, so that it is too soon to venture an opinion as to how much will be accomplished. Cards for current copyrighted books a library can order and may be sure of receiving; cards for other books it may order, but cannot tell beforehand whether they will be supplied; and the success of the plan will depend largely upon how promptly cards can be sent in response to orders, and how promptly libraries can be notified whether or not they will receive cards for non-copyrighted books. The saving of expense over private printing makes it wise for libraries that have hitherto printed their own cards to adapt their methods, if possible, even to what would otherwise be considered an annoying delay, but if prompt service can be maintained, the offer of the Librarian of Congress should be responded to by thousands of libraries, and should result in a great economy and a great improvement in cataloguing throughout the country. Our own library may confidently expect some measure of relief from this plan;—a saving in expense in printing and an increased output of work should result in proportion as we are able to use the cards printed by the Library of Congress.

It seems likely, nevertheless, that there will remain a considerable proportion of our current work that will not be affected, and I still hope to see some coöperative scheme inaugurated by four or five college or reference libraries working together that will still further diminish the present expense of printing.

Although the reiteration of our present difficulties is tiresome, I must quote from Mr. Tillinghast's report what he has to say on the subject: "The conditions under which we work are bad and grow continually worse; we have not sufficient space in which to handle

the books properly; at the desk where the book-plates are put in, at the shelf department desk in the east stack, and at the place where the shelf-list work must be done in the west stack, and at the cataloguers' desks books are crowded together in such a manner that injury to bindings, to unbound books and to loose plates can scarcely be prevented, while the same crowding delays the work at every step, wearies the workers, and is continually resulting in the temporary misplacement of books that are particularly wanted. It is often necessary on the arrival of a box to place the books, while waiting for classification and for cataloguing, on various shelves here and there in the stack. When a book is asked for, it has to be looked for in all these places, and the chances of overlooking it, and the chances of losing memory of books so scattered, when there is time to take them up, are great, even though care is taken to keep records of all such colonies of books."

ORDERING DEPARTMENT AND FINANCIAL CONDITION.

The following table shows the income of our book-funds, receipts from other sources for the purchase of books, and expenditure for books during the last six years.

INCOME AND EXPENDITURE.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
From book funds, —						
Balance from previous year	\$4,131	\$2,864	\$2,303	\$737	\$5,028	\$5,176
Income of the year	15,189	13,991	13,010	18,301	18,510	19,279
Total available	19,320	16,855	15,313	19,038	23,538	24,455
Spent for books	16,456	14,552	14,576	14,010	18,362	19,927
Balance to next year . . .	2,864	2,303	737	5,028	5,176	4,528
Special gifts, sales, etc. —						
Balance from previous year	1,396	1,205	1,176	839	2,940	936
Received during the year .	2,958	349	506	3,906	5,137	6,115
Total available	4,354	1,554	1,682	4,745	8,077	7,051
Spent for books	3,149	878	843	1,805	7,141	5,100
Balance to next year . . .	1,205	1,176	839	2,940	936	1,951
Total spent for books, —						
College Library	\$19,605	\$14,930	\$15,419	\$15,815	\$25,503	\$25,027
Department Libraries* . .	5,184	4,070	5,322	3,869	4,748	4,484
Total	\$24,789	\$19,000	\$20,741	\$19,684	\$30,251	\$29,511

* Not including the Law School, which spends from \$3,600 to \$11,000 a year for books, but does not order through the College Library.

The work of the Ordering Department, in charge of Mr. Potter, is summed up in the following table: —

WORK OF ORDERING DEPARTMENT.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
New orders, —					
Total received and examined . . .	4,152	6,687	7,049	13,001	10,021
Already owned or ordered	964	1,388	1,712	3,205	2,596
Forwarded	3,016	3,746	5,010	9,612	6,782
Estimate of cost, —					
For the College Library	\$5,970	\$6,765	\$9,510	\$19,255	\$14,759
For Departments	3,245	3,806	1,942	3,066	2,510
Total estimated cost	9,215	10,071	11,452	22,321	17,269
Shipments received from abroad . . .	22	31	39	44	52
*No. of vols. bought for College Lib. .	3,581	4,385	6,045	6,774	7,061
†Total gifts examined and passed on .	13,475	14,011	19,544	22,432	18,984

Under "new orders" are included both books bought with Library funds and books paid for by gifts, such as the Hammer gift and the Coolidge and Treat gifts, since the labor and responsibility of forwarding these orders falls to the Ordering Department.

The work of the year was naturally less than that of 1899-1900, which was an exceptional year on account of the receipt of the large Riant library, but an examination of the table shows that there has been a constant increase in recent years and that the work of the year 1900-01 was in every respect, in the number of orders handed in, the number of orders forwarded, the estimated cost of purchases, the frequency of receipt of foreign shipments, and the number of volumes actually bought, twice or more than twice as great as in the year 1896-97, four years earlier. In regard to this Mr. Potter says in his report: "The great increase of work is indicated in the above tables; yet the staff remains the same as years ago when the work was not only less in quantity but easier in quality, — for as the Library grows larger we not only have more difficult orders to handle, but the task of searching in the catalogues becomes more arduous. That the present staff cannot keep up properly with the work was but too plainly demonstrated at various times last winter. Much of Mr. Tufts's time is now occupied not only with the care of the Map Collection but with work on the Harvard University Collection as well, and unless he is relieved of this it will be less and less possible to

* Excluding volumes formed by binding periodicals and pamphlets.

† Including both volumes and pamphlets. See p. 195.

unt on his aid in looking up orders, etc. With an additional sistant of good intelligence, I should hope not only to accomplish the work without the present delay, but to rearrange the details it in such a way that I could myself find more time for examining ok-lists, both new and old, and in general keeping a wider oversight over the growth of the Library. More should be done in the ay of bringing promptly to the attention of professors the titles of w books just published and of old books offered in second-hand ts. In many subjects the Library is weak, yet they are not built because no one has the time to do it. Such a strengthening and organizing of the department as I have in mind would, by relieving e of certain details, give me the time needed for such matters."

Mr. Potter's last report called attention to various points at which e Library needed strengthening, and asked for a special appropriation to be expended on some one of these points. An appropriation

\$100 was granted and was used for the purchase of grammars d dictionaries of the less known languages. A further appropriation of the same amount will be devoted to the same purpose, as any gaps still remain to be filled. In addition to this Mr. Potter ports that he has lately "made special effort to increase our length in certain directions by each year keeping a special lookout second-hand catalogues for books on particular subjects. In this ay our collections on Ossian and Chatterton have been very materially increased and at very small expense. During the past year we ve picked up many early editions of Byron and of Browning. e have also lately added many works on the history of printing."

The Library's foreign agents for the supply of books remain the me as last year, except that our Scandinavian business has been nsferred to the Skandinavisk Antiquariat at Copenhagen. Our her agents are Kegan Paul, Trench, Trübner & Co., E. G. Allen & urray (for periodicals), and Maggs Bros. (for out-of-print books), London; Schleicher Frères, in Paris (whose foreign order business s lately been made over to Ch. Gaulon et Fils); Otto Harrassowitz, Leipzig; Brockhaus, in Leipzig; and Bernardo Seeber, in Florence; occasional orders being sent to other booksellers. All of them l orders for out-of-print books more expeditiously and certainly an American booksellers are able to do. In regard to the difficulty obtaining such books in this country Mr. Potter says: "I know no bookseller in this country who can be depended upon to hunt scarce books with anything like the energy that the European lers show in this important part of their work. I shall not mpt to say whether this is due to a lack of organization in the

trade or to a national disinclination to bother with small matters. (I am speaking of books that are rare, not in the sense that they command a high price, but that are merely out of print and hard to find.) There are now on our lists at least a hundred such books, and the search for them seems almost hopeless. Advertising in the *Publishers' Weekly* does not seem to be of much use. Nor have we as yet had much success from a plan of sending a type-written list of desiderata to different booksellers; but I shall continue this plan in default of better means. The only other way of finding these books is the chance of running across them in second-hand catalogues. We have during this year bought much less than usual from American auction sales; this partly because I have not had time to examine the catalogues carefully, and partly because, owing to the high prices brought about by better times, we have lost a large proportion of the books bid on."

THE ARCHIVES AND THE HARVARD COLLECTION.

In June the Library lost the services of Mr. William Garrott Brown, who since 1893 had been in charge of the Archives, with the title since 1896 of Deputy Keeper of University Records, and who now retires in order to devote himself to literary work. In the eight years during which Mr. Brown has been in charge the collection of printed matter relating to the history of the University, its officers and graduates, has increased greatly in size and value. Mr. Brown was charged with gathering in from many different quarters everything that can illustrate the present or the past life of the College. A circular which we have been in the habit of sending to persons likely to be able to contribute desirable material states the object of the collection:—

"The Librarian desires to obtain for the special collection relating to Harvard University in the College Library everything that illustrates in any way the current life of the College. To this end the coöperation of the students in general and in particular that of officers of College Societies, Classes, Papers, etc., is asked.

"Copies of programmes, posters, tickets, bills of fare at society or class dinners, circulars, pamphlets, photographs, clippings, badges, medals and anything that bears upon the student life of the present or the past will be welcome.

"A collection of this kind can only be made through the goodwill and painstaking of many individuals, each contributing what comes in his way."

Much of the material received in response to this circular, or from the College Printing-office, is of a fugitive nature, and to

ensure preservation needs to be mounted or otherwise especially cared for. Much of this work has been done, but much still remains, for over 4,000 items are sometimes received in the course of a single year, and the whole of one person's time could well be spent upon it. Since Mr. Brown's departure Mr. P. H. Tufts, of the Library staff, who had already made himself familiar with the collection, has been in temporary charge.

The Archives, or collection of manuscript records and papers, increases much less rapidly in extent, but is naturally of still greater value. Mr. Brown's familiarity with its contents brought his services often into request by officers of the University and historical students in search of information.

Satisfactory work cannot again be taken up on these two collections until they are placed in suitable quarters. At present all work devoted to them has to be done under such drawbacks as to light, air, and convenient access, that it should be reduced to its lowest limit consistent with preserving their completeness and preventing their falling into disorder.

WILLIAM COOLIDGE LANE,
Librarian.

THE GRAY HERBARIUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — No change has been made in the regular staff of the Gray Herbarium during the past academic year. It has been found desirable, however, to secure the services of temporary assistants, as follows: Mr. Carleton E. Preston was employed for three months to aid in the sorting and distribution of newly acquired material; Mr. J. M. Greenman was commissioned during July and August to make for the Gray Herbarium sketches, tracings, and notes upon certain types of tropical American plants preserved in the Royal Botanical Museum at Berlin; Mr. R. G. Leavitt has been employed to revise Dr. Gray's *Lessons in Botany*. This valuable work was first published in 1836, and with several revisions by its author has had a period of usefulness scarcely exceeded by any other American textbook. During the time which has passed since the last revision important changes have been introduced in the methods of presenting elementary botany. Somewhat less attention is being paid to exterior form, morphology, and classification, and far more to the vital aspects of plant life, to vegetable physiology, and ecology. For this reason a general revision of the *Lessons* has seemed desirable. Many parts have been rewritten, new and excellent illustrations, drawn by Messrs. C. E. Faxon and F. Schuyler Mathews, have been added, and the descriptive text amplified by directions for numerous experiments and laboratory exercises. The revised book under the title of *Outlines of Botany* is nearly through the press, and will, it is confidently believed, prove a valuable addition to the series of botanical textbooks owned by the Gray Herbarium.

Mr. C. G. Pringle, collector for the Herbarium, has made another journey to Mexico, where, notwithstanding great difficulties, due to the illness of his assistants and to extreme drought in some of the regions explored, he has again secured extensive and valuable collections, including many plants new to science.

In order to accumulate material for exchanges with foreign herbaria, the staff has during the past summer made a special effort to secure for distribution a large number of specimens of recently distinguished species, extra-limital plants, and noteworthy forms

belonging to difficult and imperfectly understood groups. To this end more than 7000 specimens have been collected, representing about 60 species of unusual interest. This work will be continued in coming seasons, and a series of *exsiccatae* issued in "centuries" in the manner now followed by several foreign herbaria.

During the year important monographic work has been done, upon material loaned from the Gray Herbarium, in the *Myrsinaceae* (736 sheets of specimens) by Prof. Carl Mez of the University of Halle, and in the genus *Senecio* (1109 sheets) by Dr. J. M. Greenman at the University of Berlin.

Of the tropical collections recently determined at the Gray Herbarium the most noteworthy is a series of nearly a thousand specimens, secured on the Galapagos and Cocos Islands by Messrs. R. E. Snodgrass and E. Heller of the Hopkins-Stanford Exploring Expedition. These plants were sent to the Herbarium by the Zoölogical Department of Leland Stanford Jr. University, and represent such a large proportion of the known vegetation of those islands, that it has seemed best in lieu of a report upon them to prepare general revisions (together with the history, synonymy and bibliography) of the floras of the Galapagos and Cocos Islands. These catalogues, including not only many species hitherto unrecorded upon the islands, but much tabular matter to show the distribution of the plants and complicated relations between the florulae of the different islands, are nearly ready for press.

The number of specimens received by the Gray Herbarium from all sources during the year was 16,799. The number of new sheets of mounted specimens incorporated in the organized collection was 14,002. The accessions to the Library have amounted to 154 volumes and 339 pamphlets. Miss Mary A. Day, the librarian of the Gray Herbarium, has in advanced preparation a bibliography of North American local floras, a detailed catalogue, arranged upon the plan of her recently published "Local floras of New England."

The endowment of the Gray Herbarium, although considerably increased in recent years, yields an income as yet inadequate to the needs of the establishment. It is thus necessary from year to year to cover a considerable part of the current expenses by gifts for present use. In February the members of the Visiting Committee, to whose fidelity and interest the Gray Herbarium has for many years been greatly indebted, issued a circular describing the nature of the scientific work done at the Herbarium and stating its pecuniary needs. Prompt response was received from no less than 150 contributors, and the sum thus obtained was substantially augmented by

the personal contributions of the Committee. In this way it was possible fully to cover the expenses of the past academic year.

During the year the staff has published 21 papers and botanical articles. Of these the more important are as follows : —

The representatives of *Scirpus maritimus* in America; by M. L. FERNALD, Rhodora, ii, 239-241.

The northeastern *Carices* of the subsection *lexicariae*; by M. L. FERNALD, Rhodora, iii, 43-56.

The herbaria of New England; by M. A. DAY, Rhodora, iii, 67-71, 206-208, 219-222.

Contributions from the Gray Herbarium, n. s., No. xx; by B. L. ROBINSON, Proc. Am. Acad. xxxvi, 455-488; including I. Synopsis of the genus *Melampodium*; II. Synopsis of the genus *Nocca*; III. New species and newly noted synonymy among the Spermatophytes of Mexico and Central America.

Contributions from the Gray Herbarium, n. s., No. xxi; by M. L. FERNALD, Proc. Am. Acad. xxxvi, 491-506; Some new Spermatophytes from Mexico and Central America.

The vascular plants of Mount Katahdin; by M. L. FERNALD, Rhodora, iii, 166-177, t. 32.

B. L. ROBINSON, *Curator*.

THE BOTANIC GARDEN.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Director of the Botanic Garden, I have the honor of presenting the annual report for the academic year 1900–01.

During the whole year the management of the Garden and its finances has been under the charge of the Assistant Director, Mr. Oakes Ames, and the improvements of which I am about to speak are due to his judicious care. Some of these improvements have been undertaken by him at considerable cost, in the hope of ultimate reduction of the running expenses of the Garden.

While abroad this year the Director received from one friend of the Garden a draft to be expended in the purchase of desirable specimens for the Garden and Museum, and from another friend a draft to provide for the further equipment of the Memorial Greenhouse. And, since his return, he has also had the great pleasure of receiving from Mr. H. H. Hunnewell a gift of twelve thousand dollars to extinguish the debt incurred in the assignment to the Botanical Department of a portion of the Mineralogical Section of the University Museum. These gifts may be taken as an indication that the Botanic Garden and Botanical Museum interest some persons as useful factors in the work of the University. It would seem as if the ordinary annual expenses of these two establishments ought to be met by the assured income of a larger fund than they now possess. At some time in the near future the Department will be obliged to bring this subject before the friends of the University.

Mr. Cameron, the Head-Gardener, makes the following statement relative to the out-of-door garden:—

The most important work done during the fall was to give all the beds below the terrace a liberal supply of well-rotted stable manure. The good effect of this work could be seen in the increased vigor and showiness of the plants in the summer.

The winter was comparatively mild; but the spring was exceptionally late and cold. The summer weather was very favorable for plant growth. We had during the hot months many well distributed rainfalls.

During the year very few of the plants have been lost, and at the present time all are in good condition.

The Garden has been changed a good deal in its general appearance by the removal of some of the duplicate large trees on the east side, whereby we have now the advantage of greater light. The lawns which were thus opened have been planted with a selection of bulbous plants.

Mr. Ames has replaced one of the smaller boilers in our battery by a larger one, and we can now heat even the farthest greenhouse as well as could be wished. The consumption of coal has not been much increased.

We feel more and more the need of an adequate Palm-house. The central building, in which our fine palms are growing at present, is too crowded for vigorous growth and proper display of these plants. When the wished-for Palm-house is presented to the Garden, it will naturally be placed at the end of the present range, and the central house now used for palms would be utilized for water-plants, such as water-lilies and the like, for which it is well fitted. We could even cultivate *Victoria Regia* there.

Our collection of Cactaceae has been considerably increased by purchase. The new method of planting them out, conservatory-fashion, has proved to be successful from every point of view. For the purpose of clearing up some doubtful points in connection with the morphology and ecology of Cactaceae and other desert plants, it was decided to offer to Mr. Carleton E. Preston a scholarship sufficient to defray his expenses during a protracted stay in the drier portions of Arizona. Some of Mr. Preston's results have been published; others are nearly ready.

Interest in the new memorial greenhouses and laboratory continues to increase. The new fixtures and equipment have enabled Dr. True and his advanced pupils to carry on researches which, it is understood, are nearly ready for publication. Iron tables and electric fittings are among the most recent additions. The latest acquisitions are the following: a dynamo and motor for the reduction to 110 voltage of the 500 volt current supplied by the Cambridge Electric Light Company, thus affording facilities for the continuance of observations in regard to certain effects of electricity and of magnetism on plants. The Department is under great obligations to Professor Trowbridge for much aid in planning the apparatus. All of these new appliances are provided for by the generous gifts of the donor of the houses. He is making it his care that the houses and laboratory shall not stand in want of any reasonable addition to their outfit.

From previous reports it will be remembered that we have a laboratory for morphological study in the long brick range connected with

the Garden lecture-room. Changes have been made in this laboratory to adapt it better to the needs of the Summer School. During the past summer there were two courses in Botany given in this laboratory, under charge of Mr. Olive. The instructor sends the following memorandum:—

Course I was modeled after Botany 1, and was taken by eighteen students, of which number twelve were men and six were women. Approximately 90 hours were spent in laboratory work and 80 hours in lectures; whereas in the college course, of which this is the equivalent, approximately 55 hours of laboratory work are required, together with 28 hours of lectures. More work was really accomplished, therefore, during the concentrated laboratory period of the Summer School than during the second semester of the college year. The illustrations utilized by Botany 1 were supplemented by many others, some work with the compound microscope was introduced, and field work, a feature not practicable for the spring class, was made an important feature of the summer course.

Course II in the Summer School was planned to fulfil to a certain extent the wishes of those teachers who advocate the study of types by the more advanced students. Nine students, four of whom were men and five women, all but one teachers, took Course II. All had had good preparation in Botany.

Of the twenty-seven students attending the summer courses sixteen were teachers and nine were Harvard students.

For some years the Assistant Director has maintained, at his home in North Easton, a laboratory for the investigation of certain problems in Morphology and Vegetable Physiology. Connected with the laboratory is a range of greenhouses which afford abundant material for the prosecution of this class of studies, especially in hybridization. Mr. Ames proposes to place this laboratory and its equipment, its greenhouses, and the extensive library, at the service of the University for the coming two years, for such advanced students as may be selected for this work by the department of Phanerogamic Botany. In the collection available for histological and morphological, as well as for physiological studies, the orchids alone number about 200 genera, 2000 species, and 600 hybrids. It is doubtful if a more favorable opportunity for the conducting of such investigations can be found anywhere. The Director recommends that this generous offer be accepted and utilized immediately.

As stated in previous reports, an attempt has been made to establish, on a small scale, an experimental garden in Cuba. Mr. E. F. Atkins, of Boston, has provided land, local labor, and sufficient funds for the preliminary work. The early experiments are confined to eight of the more important cultivated tropical species, chiefly

with a view of improving the varieties now available to the cultivators in the island. Mr. R. M. Grey, well known for his success in hybridizing plants, is in charge of the place, and he reports favorably as to the outlook. He has with him Mr. Bohnhof, who has had good training preparatory to such investigations. It is very pleasant to note that the enterprise has received from numerous gardens and experiment stations in the tropics, encouraging assistance in many ways.

The Cryptogamic Laboratories and Herbarium occupy the whole of the fifth floor of the Botanical Section of the University Museum. The Laboratories, under the charge of Professor Thaxter, have been active in instruction and investigation. Professor Farlow communicates the following memorandum regarding the Herbarium: —

The Director of the Cryptogamic Herbarium has made an effort during the year to arrange the different orders of cryptogams so that they may be more easily consulted by specialists, and particular attention has been paid to the extensive collection of mosses and hepatics, formerly deposited in the Gray Herbarium and removed to the Museum in 1899. The valuable Sullivant and James collections are now in part arranged, and many packages containing important collections, which had not been opened since the death of Mr. Sullivant, more than twenty-five years ago, have been inserted in their proper place, so that the collection is rich in exotic as well as in American species. The Herbarium was so fortunate as to be able to secure the services of Mr. J. F. Collins, of the Botanical Department of Brown University, during a part of the year, and to his careful management of the work the Herbarium is much indebted.

The Phanerogamic Laboratories at the Museum have had the usual number of students in the different classes. No suggestions need be made at present for any changes in the rooms or equipment.

When the Ware collection of Blaschka glass models of plants and flowers was begun in 1886, a plan was made for representing ultimately all of the important natural orders and genera of our American plants. We now have nearly enough complete specimens to cover every large natural group of flowering plants, and it is understood that Miss Ware has perfected arrangements for continuing this artistic work in order to fill the gaps. Since his father's death, Mr. Rudolph Blaschka carries on his studies without any assistance whatever, and every detail of artistic and mechanical construction is in his hands alone. Some of his latest creations, notably the models of *Solidago*, have consumed a far greater amount of time than any of his previous models, but even a casual inspection shows that the amount of detail in these later specimens is much greater than in

any he has made before. The results of the activity of these artists comprise up to date about seven hundred complete models of entire plants and nearly three thousand analytical details.

The laborious task of transferring the larger models to plaster of Paris supports is going steadily on. In the revision of the labelling we have been so fortunate as to secure the services of Dr. J. M. Greenman. The nomenclature of the entire collection will be brought into conformity with that employed at the Garden and the Gray Herbarium.

The very large collection of specimens illustrating the more useful products of economic plants grows in size and utility every year. It is now in a condition to be consulted by specialists in all departments of Economic Botany, and it is placed freely at the disposal of students properly qualified. The friendly relations which exist between this establishment and kindred museums justify the hope that our collections will continue to increase rapidly and symmetrically. The illustrated catalogue of economic plants and products, on which the writer has been engaged for a long time, will probably be completed within the next four years.

Concerning our collection of fossil plants, Professor Jackson sends the following communication : —

During the year, in what time he had available, Dr. Robert T. Jackson labelled the cretaceous plants from the Laramie Group of Golden, Colorado, and the Dakota Group of Kansas. Especial attention was paid to seeking out and labelling types, of which there are many in this group. A beginning was also made in the labelling of the Carboniferous collection, this being done from the Lesquereux Catalogue, which gives both the identification and locality of the specimens.

The Overseers' Committee on the Botanic Garden has lost two of its members during the past academic year. Mr. Augustus Lowell was a member of the Committee from its organization in 1886, and was very constant in his attendance upon its meetings. He had a well-marked taste for Botany and Horticulture, and a wide acquaintance with these subjects ; so that his counsel was always judicious. He did much toward shaping the policy of the Garden and contributed in many ways to its advancement. Mr. George A. Nickerson became a member of the Committee in 1892, and attended all of its sessions when his health permitted. He had manifested of late special interest in the exhibition of living economic plants in one of our greenhouses, and had advised some changes in this respect, by which the number of species would have been considerably increased.

But his untimely death renders necessary a postponement of these desirable improvements.

The Director desires to place on record, as he has had occasion to do many times before, his deep obligations to the members of the Overseers' Committee on the Botanic Garden for their advice and constant assistance. He wishes, also, to bear testimony to the well-directed zeal and generosity of the Assistant Director.

GEORGE LINCOLN GOODALE, *Director*.

DECEMBER, 1901.

THE ARNOLD ARBORETUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I have the honor to submit the following report on the progress and condition of the Arnold Arboretum during the year ending July 31st, 1901.

The principal work of construction accomplished during the year has been the draining of the large peat meadow near the Jamaica Plain entrance, made possible by the construction of the sewer built by the City of Boston to lower the water-level in this meadow and adjacent territory, and finished last winter. A drainage canal from five to six feet deep has been cut through the meadow, and in connection with this tile drains have been laid where necessary. In this way about fourteen acres of land which has been too wet for the satisfactory growth of trees has been made available for the collections and for the use of the public. About thirty acres occupied by the Birches, Nettle-trees, and conifers have been plowed, graded, and laid down permanently in grass; these trees have been carefully cultivated and the ground about them enriched. The boundary plantations on the Peter's Hill extension have been finished; a beginning of the arrangement of the systematic groups of Willows and Poplars has been made on the lower southern and southeastern slopes of the hill; and a large group of conifers, principally Spruces and Firs, occupying several acres, has been planted near the Walter Street front, to supplement groups of these trees already established on the opposite side of Bussey Street. The strip of land between the drive at the eastern base of the hill and the woods which separate this drive from Bussey Street has been planted with a collection of the different species and varieties of Crab-apples, to supplement the collection of these trees and shrubs near the Forest Hills entrance, which is greatly confined for want of sufficient space and is an inadequate representation of these plants. It is hoped that this new group, which will eventually occupy between two and three acres, will in a few years prove an attractive popular feature when the trees are in flower, and, like the flowering of the garden varieties of the Lilac, bring many visitors to the Arboretum.

The exchange of plants and seeds with other horticultural and botanical establishments has been continued during the year. 6,119 plants and 1,739 packets of seeds have been distributed, as follows:

To the United States, 6,074 plants and 328 packets of seeds; to Canada, 17 packets of seeds; to Great Britain, 45 plants and 205 packets of seeds; to the continent of Europe, 1000 packets of seeds; to Japan, 179 packets of seeds; to Java, 10 packets of seeds. There have been received during the year 6,183 plants (including grafts and cuttings) and 415 packets of seeds.

During the year 2,479 sheets of dried plants have been added to the herbarium, and 1,928 sheets distributed to other establishments.

The library has received by gift 856 bound volumes and 460 pamphlets.

The study of the genus *Crataegus* (Hawthorns) as it appears in North America has for the last two years largely engrossed the scientific activity of the Arboretum, and large collections of these plants have been made in all parts of the country where they grow. Sowings of the seeds of many species have been made, and seeds and herbarium specimens have been distributed to the principal gardens and botanical museums in the United States and Europe. Four technical papers on this subject have been published by me during the year, but careful and sustained work extending through several years will be needed before all the forms which this genus has developed in North America can be satisfactorily elucidated and added to the collection. This work, which has already made known a number of trees which had previously escaped the notice of botanists, has delayed the appearance of the two final volumes of *The Silva of North America*; these will probably appear, however, before the end of another year.

Satisfactory progress has been made on the Bradley Bibliography of dendrological literature, and about thirty-one thousand cards are now finished.

In response to an appeal to the public made by the Visiting Committee, \$95,970 has been added during the year to the Endowment Fund of the Arboretum in sums varying from \$5 to \$5,000. It is a cause of satisfaction that these gifts for the endowment of the Arboretum have not come entirely from persons living in Massachusetts, and that a substantial portion has been contributed from other states.

I take this opportunity to express my thanks again to the Trustees of the Massachusetts Society for the Promotion of Agriculture for their annual grant of \$2,500 for the maintenance of the Arboretum, and to the members of the Visiting Committee for their support and assistance.

C. S. SARGENT, *Director*.

THE CHEMICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,— No changes were made in the courses of instruction offered for the year, and but a single change in the instructors in charge of these courses: Mr. G. W. Heimrod gave the lectures in Electrochemistry during the second half-year (Chemistry 7²) in place of Dr. G. N. Lewis, who had been assigned a Parker Fellowship.

The number of students in the several laboratory courses during the year and in June, 1900, was as follows:—

	October, 1900.	January 1st, 1901.	June 1st, 1901.	June 1st, 1900.
Chemistry <i>B</i>	81	72	58	53
Chemistry 1	339	314	278	304
Chemistry 3	132	124	122	86
Chemistry 4	42	41	37	33
Chemistry 5	35	33	29	21
Chemistry 6	17	16	14	14
Chemistry 9	19	17	..	..
Chemistry 10 . . . . .	..	..	16	13
Chemistry 20 <i>a</i>	2	2	2	2
Chemistry 20 <i>b</i>	6	5	5	7
Chemistry 20 <i>c</i>	2	2	2	3
Chemistry 20 <i>d</i>	3	3	3	4
Chemistry 20 <i>e</i>	4	4	4	2
Special	1	1	1	..
Total	683	634	571	542

The number of students in General Chemistry (Chemistry *B*), Descriptive Chemistry (Chemistry 1), and Qualitative Analysis (Chemistry 3) was much larger than in any previous year, and for the first time we were unable to provide desks for a considerable number of men who wished to enter these courses. Our records do not show how many of the unsuccessful applicants immediately withdrew into courses in other subjects, but forty students allowed their applications to remain on file, with the hope of securing working places within a reasonable time. Places were assigned to sixteen of these men during the month of October, but there were thirteen names still on the waiting list on the first of December; and there were five men who were unable to secure desks until after the Christ-

mas recess. The proportion of students who were unable to begin their work in the laboratory at the opening of the year was largest in Descriptive Chemistry (Chemistry 1), since collegiate seniority was considered in the assignment; it here reached the serious ratio of one to every eleven or twelve applicants. Among the students who were thus seriously handicapped in their work were several members of the Lawrence Scientific School for whom Chemistry was a required study. During the whole year students in the two elementary courses (Chemistry B and Chemistry 1) were obliged to work in the same laboratory, to their own disadvantage and to the great inconvenience of their instructors. In the more advanced courses the numbers were unusually large and the various laboratories were filled or over-crowded.

The following investigations were made during the year under the direction of Professor Jackson: Mr. R. B. Earle continued his work upon the colored substances derived from nitro compounds by the action of sodic alcoholates; Mr. H. C. Porter took up the study of tetrabromorthoquinone which had been begun by Mr. W. Koch in the previous year; Mr. A. H. Fiske studied many derivatives of *v*-tribrombenzol; Mr. K. L. Mark continued his study of dicyanamide, and later attempted to prepare from alizarine the corresponding orthoquinone.

Professor Sanger, at the request of the Bureau of Construction and Repair, United States Navy Department, made an extended investigation into the absolute and comparative merits of two processes for the fire-proofing of certain woods used in the construction and internal fitting of vessels of the United States Navy. The investigation was carried on in conjunction with Naval Constructor William J. Baxter, U.S.N., under whose direction exhaustive physical tests were made on the woods at the Boston Navy Yard. With Mr. M. L. McCarthy, Professor Sanger studied the determination of zinc by electrolysis, and devised a method for the determination of zinc in the presence of large quantities of organic matter. Under his direction Mr. O. L. Daudt made a study of the method of Kinnicutt for the determination of carbonic oxide, with particular reference to its use in the examination of the air of living rooms, and Mr. N. R. Davis investigated the action of polysulphides of ammonium upon cupric sulphide.

The following investigations were carried on under the direction of Professor Richards: Mr. G. W. Heimrod completed the chemical work upon the silver voltameter, and showed that the new form of this instrument is exceedingly trustworthy; Mr. E. H. Archibald

determined the atomic weight of caesium by the analysis of the chloride and found the value 132.89 as the average of ten determinations; Mr. F. Bonnet, Jr., continued his work upon the constitution of chromic solutions; Mr. H. Bisbee worked out the mechanism of the occlusion of magnesia by calcic oxalate, determined the solubility of calcic oxalate and studied certain phenomena of electrolytic deposition; Mr. R. C. Wells verified with great care the transition temperature, $32^{\circ}.38$, of sodic sulphate by means of three new standard thermometers recently purchased by the Laboratory, and Mr. E. H. Webb continued the photographic study of the allotropism of steel.

Dr. Torrey investigated the action of alkaline nitrites upon certain organic bodies containing halogen.

Professor Hill continued the study of dehydromucic acid and certain of its derivatives; under his direction Mr. W. J. Hale continued the investigation of nitromalonic aldehyde, and Mr. O. F. Black undertook the study of the product formed by the action of potassic nitrite upon ethyl mucobromate.

The following papers were published during the year:—

1. Certain Derivatives of Metadibromdinitrobenzol. By C. L. JACKSON and W. P. COHOE. *Proc. Am. Acad.*, xxxvi, 75; *Am. Chem. Journ.*, xxvi, 1.

2. A New Conception of Thermal Pressure, and a Theory of Solutions. By G. N. LEWIS. *Proc. Am. Acad.*, xxxvi, 145; *Zeitschr. phys. Chem.*, xxxv, 343.

3. On Certain Derivatives of Orthobenzoquinone. By C. L. JACKSON and W. KOCH. *Proc. Am. Acad.*, xxxvi, 197; *Am. Chem. Journ.*, xxvi, 10.

4. On the Action of Sodic Sulphite on Tribromdinitrobenzol and Tribromtrinitrobenzol. By C. L. JACKSON and R. B. EARLE. *Proc. Am. Acad.*, xxxvi, 231; *Am. Chem. Journ.*, xxvi, 46.

5. Suggestion concerning the Nomenclature of Heat-Capacity. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvi, 327; *Zeitschr. phys. Chem.*, xxxvi, 358.

6. Symmetrical Triiodbenzol. By C. L. JACKSON and G. E. BEHR. *Proc. Am. Acad.*, xxxvi, 333; *Am. Chem. Journ.*, xxvi, 55.

7. A Study of Growing Crystals by Instantaneous Photomicrography. By T. W. RICHARDS and E. H. ARCHIBALD. *Proc. Am. Acad.*, xxxvi, 342; *Am. Chem. Journ.*, xxvi, 61; *Phil. Mag.*, Nov., 1901.

8. A Table of the Atomic Weights of Seventy-seven Elements. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvi, 601.

9. The Occlusion of Magnesian Oxalate by Calcic Oxalate, and the Solubility of Calcic Oxalate. By T. W. RICHARDS, C. F. McCaffrey and H. BISBEE. *Proc. Am. Acad.*, xxxvi, 377; *Zeitschr. anorg. Chem.*, xxviii, 71.

10. The Possible Significance of Changing Atomic Volume. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvii, 1.
11. The Law of Physico-Chemical Change. By G. N. LEWIS. *Proc. Am. Acad.*, xxxvii, 49; *Zeitschr. phys. Chem.*, xxxviii, 205.
On Dehydromucic Acid. By H. B. HILL:
12. On Dehydromucic Acid and Certain of its Derivatives. By I. K. PHELPS and W. J. HALE. *Am. Chem. Journ.*, xxv, 445.
13. On the Reduction of Dehydromucic Acid. By H. B. HILL and A. S. WHEELER. *Am. Chem. Journ.*, xxv, 463.
14. The Solubility of Manganous Sulphate. By T. W. RICHARDS and F. R. FRAPRIE. *Am. Chem. Journ.*, xxvi, 75.
15. The Standard of Atomic Weights. By T. W. RICHARDS. *Proc. Am. Acad.*, xxxvii, 177.

It was impossible to make further provision during the summer for the accommodation of students in Elementary Chemistry since no floor space remained which could be used for such a purpose. At the opening of the current year a still larger proportion of students, who wished to begin the study of Chemistry with us, were unable to secure desks. In the more advanced courses we are now barely able to provide our students with suitable working places; in the near future it will doubtless be impossible to find room for all who apply, unless, indeed, the growth of our advanced courses is materially retarded by the loss in successive years of an increasing number of students in the elementary courses, who are necessarily excluded from the over-crowded laboratories in Boylston Hall.

HENRY B. HILL, *Director.*

THE JEFFERSON PHYSICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—It is gratifying to notice the growth of a taste for quantitative work in the subject of Physics; for the courses in which this work is made the essential feature are steadily growing in the number of students. The purely lecture system in Physics has become obsolete in this University.

While the methods of instruction have been revolutionized during the past twenty-five years, the subject also has undergone great changes. My predecessors, lecturing on light and heat, did not feel it necessary to include the subject of electricity and magnetism in their treatment of radiant energy; for the great theory that this energy is electromagnetic had not been developed during their period of work in the University. A great advance was made in the last century when the theory of the undulatory nature of light was established. We have made a still greater stride in conceiving the waves of light and heat as electromagnetic waves, and in thus connecting in close relationship phenomena which our ancestors treated as separate and individual manifestations of nature.

Within five years, also, the subject of Physical Chemistry has become of transcendent importance; and the advanced students in Physics, both in this country and abroad, are turning their attention to this rapidly growing subject. Most of the physical units and physical constants have been determined to a degree of accuracy which is satisfactory for the needs of the engineer; and the physicist is now compelled to study the motions of the ultimate particles of matter, the molecules and ions, in order to advance our knowledge. The subject of the X-rays has given a great impetus to this new branch of physical science. Molecular physics has thus become the leading subject of the day, and the young physicist must have a knowledge of Chemistry as well as of Pure Physics and of Mathematics. While in most subjects the limits of accuracy are very wide, in Physics an accuracy often of a fraction of one per cent. can be obtained; but the difficulty of getting a result true even to one per cent. is very great. The student in Physics soon realizes that he has entered upon a strenuous career; and this conviction accounts in a great measure for the comparatively few graduate students in

all universities who continue in the work of physical investigation. It is natural to desire quick results; these, however, generally result in a lower degree of accuracy.

The number of students in the physical courses during the year was 470; we enter upon a new year with close upon 500.

Seven graduate students were engaged upon investigations during 1900 and 1901. Four of these students also acted as assistants. The positions of assistants are much valued, for they afford an experience in teaching by means of which one's knowledge is tested. The subjects of research were as follows:—

Polarization phenomena and resistance of the voltaic cell. Mr. C. H. AYRES. To appear in the *Physical Review*.

On a new form of spectroscope. Mr. THEODORE LYMAN. Publication reserved, in order that the instrument may be used in an investigation upon the short waves of light.

Occlusion of hydrogen by palladium. Mr. W. E. McELFRESH. Investigation still continued.

Relaxation time of electric condensers. Mr. H. H. BROWN. A subject for which a prize has been offered by the Berlin Academy. Mr. BROWN has accepted a position in the Belmont School in California, and has taken the necessary apparatus with him to finish the investigation, which has already occupied two years.

A modified form of vacuum pump for investigation in gases. Mr. J. E. BURBANK. Mr. BURBANK has accepted a position in a high school and the investigation was discontinued.

Electric waves on wires and in paraffine. Professor W. G. HORMELL. This paper was published in the *American Journal of Science* for December.

Contribution to the theory of the oscillator used in wireless telegraphy. Mr. C. H. CHANT, instructor in the University of Toronto. This article is published in the *American Journal of Science* for January.

The magnetic effect of rapidly moving electric charges. Mr. E. P. ADAMS, holder of the Tyndall Scholarship. Published in the *London Philosophical Magazine*.

Actinic effects of electric sparks between terminals of different metals. Mr. E. P. ADAMS and Professor J. TROWBRIDGE. Still unpublished.

Relations between the actinic effect of electric sparks and the energy necessary to produce them. Mr. C. H. CHANT and Professor J. TROWBRIDGE. To be continued.

The effect of ionization and electric resistance. Mr. T. C. MCKAY. Still continued.

The spectrum of aqueous vapor. Professor J. TROWBRIDGE. Still unpublished.

The spectra of hydrogen and some of its compounds. Professor J. TROWBRIDGE. Published in the *American Journal of Science* and in the *London Philosophical Magazine*.

In any statistical account of the number of graduate students engaged in research in the laboratory it must be borne in mind that the four assistants have been occupied either in independent investigations or in researches with the professors.

Professor Hall has given attention to the Electron theories of electrical and thermal conduction, and the possibility of producing ionization in metals by means of the X-rays, or other forms of radiation.

Professor Sabine has continued his work in acoustics, and is occupied upon the cause of the relative phase retardation of the principal polarized components of light undergoing total internal reflection. He has also devised an optical color mixer which promises to be of great service in chromatics.

Mr. C. H. Chant, of the University of Toronto, and Professor W. G. Hormell, of the Ohio Wesleyan, completed their investigations for the degree of Doctor of Philosophy during the year; and on their return to their respective universities sent two of their graduate students to study in the Jefferson Physical Laboratory.

Mr. H. H. Brown, graduate student, gave during the year a course of lectures on the ionization of gases which were well attended. These lectures were the first lectures given by a doctor of philosophy unattached to the teaching staff, and the result seems favorable to a continuance of the experiment.

It is encouraging to reflect that, although popular delusions which seem to many to have the characteristic aspect of scientific truth, may have at times great vogue, there is a small but precious contingent of young men who are being carefully trained to scientific accuracy. It may be said that the hope of the world, in so far as it is founded on a true knowledge of our surroundings, resides in the increase of such workers. Considered from this point of view, the recent gift of Mr. Coolidge for physical research is a most notable one; for it is the first recognition in America of the great importance of investigations in Physics, and of the necessity of a suitable endowment for their prosecution. The gift will greatly aid the professors and the graduate students in the Department in making this University a centre of research.

JOHN TROWBRIDGE, *Director.*

THE PSYCHOLOGICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The work of the Psychological Laboratory was carried on during the past year along exactly the same lines as in the preceding year, by the same instructors, and without important changes in the technical equipment. While the elementary courses were well attended, the chief emphasis was again laid on the original research work, in which twenty-one advanced students were engaged.

The following investigations have been completed or brought to a provisional conclusion: Mr. Holt has studied the phenomena of partial blindness and visual anaesthesia during voluntary eye-movements; Mr. MacDougall has examined the absolute consciousness of direction and distance; Mr. Messenger has carried on his investigation into the discrimination of tactual sensations, supplemented by Mr. George's study of the temporal relations of such discriminating acts; Mr. Haines has completed his extensive work on combinations of simple judgments, and Mr. Stetson his study of rhythm and rhyme; Mr. Moore has been engaged with the voluntary power over memory pictures, Mr. Hylan with the duration of certain acts of apperception, Mr. Dunlap with the perception of tactual time-intervals, and Mr. Amsden with certain optical illusions; Mr. Yerkes has carried on his large work on the reaction-times of animals, supplemented by studies in the associations of animals; Mr. Huggins has worked on the habits of the crayfish, Mr. Rouse on the emotions of birds.

More than in previous years has the double need been felt, first, of an official organ of publication; secondly, of a laboratory building which should offer more satisfactory quarters for work than those in Upper Dane Hall. In both directions the first steps have been taken during the past year.

The papers of the laboratory students have thus far been scattered. Many of them have appeared in the *Psychological Review*, but the space at our disposal in the columns of that magazine has never been in proportion to the quantity of work produced. Some of the more extensive investigations of previous years, including even some doctors' theses, had to remain unpublished. The plan which has been formed now is to publish most of our researches under the title

"Harvard Psychological Studies," as special Supplementary Volumes of the Psychological Review. Favorable conditions have been secured from the publishers. The first of these volumes, containing about fourteen papers from the above-mentioned work of the last year, is to appear in the spring of 1902.

Our hopes for a new laboratory are not quite so near fulfilment at present, but in this respect also the last year has given the decisive impulse. The Philosophical Division together with the Visiting Committee decided in the spring of 1901 to work systematically toward the erection of a spacious building, devoted entirely to the work of the Division, including that in philosophy, psychology, sociology, and education. It is the wish of all concerned to call the proposed building after the man who among all Harvard graduates gave most inspiration to philosophical feeling, — Ralph Waldo Emerson. It is our hope to open Emerson Hall on the hundredth anniversary of his birthday, in May, 1903. The motives which led us to desire such a building, and the purposes which it can serve not only for the department but for the whole University and community, I have fully set forth in a circular which was reprinted in the June number of the Harvard Graduates' Magazine. While the first two stories of the building will be devoted to lecture rooms, libraries, seminary rooms, etc., the whole third story will be a psychological laboratory with about sixteen rooms adjusted to the special needs of our work.

HUGO MÜNSTERBERG,

Professor of Psychology.

THE OBSERVATORY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — Three important astronomical events have occurred during the past year: the opposition of the Planet Eros, which brought this interesting object nearer to the Earth than it will be again for many years; the appearance of the New Star in Perseus, the brightest object of its class which has been seen for three hundred years; and the Total Eclipse of the Sun in Sumatra, in which the duration of totality was greater than in any similar event during many years.

Fifty directors of observatories offered to coöperate with the Director of the Paris Observatory in observing the position of Eros to determine the solar parallax. Additional observations made here, therefore, did not seem necessary. On the other hand, measures of the light promised to be of special importance; and their value has been greatly increased by the discovery that the light of Eros is variable.

Much attention has been paid to the study of the New Star, as described below. It should be mentioned, however, that it is much more difficult to discover a faint object of this class than a bright one, and that of the eight new stars observed during the last fifteen years six, including all that were faint, were found at this Observatory. The general failure of the Eclipse observations in Sumatra, owing to clouds, seems to justify our policy of not spending much money on such work. Instruments are loaned to observers who will go in any case, and the large expense of sending special observers is thus avoided.

Last year it was shown that the unpublished material at the Observatory would fill about twenty-eight volumes of the *Annals*. Accordingly an effort has been made during the past year to put it in shape for publication, or at least in such a form that its final publication would not be a matter of great difficulty. For this purpose samples of many of the tables have been put in type, so that the exact form may be settled. It appears that of these volumes two and a half have been completed and distributed, four and a half are partly in type, good progress has been made with twelve, and but little has been done with nine. The importance of an early completion of this work cannot be over-estimated. A small additional

expenditure would permit rapid progress; and delay endangers the possible loss of much work on which large expenditures of time and money have already been made.

OBSERVATORY INSTRUMENTS.

East Equatorial. — The observations with this instrument have been made by Professor O. C. Wendell and have been of the same general character as in previous years. Over sixteen thousand photometric light comparisons have been made, largely with the polarizing photometer with achromatic prisms. With this instrument 1,224 photometric comparisons were made of Nova Persei, No. 2, 976 of SS Cygni, 944 of R Ursae Minoris, 896 of U Cephei, 560 of χ Cygni, 512 of β Persei, 352 of the Algol variable $+45^{\circ}3062$, 288 of δ Serpentis, 256 of the variable 73.1901 Scuti, 242 of W Delphini, 240 of Z Herculis, 160 of R Lyrae, 144 of $+42^{\circ}3338$, and 128 of U Geminorum. In addition to the above, 1,804 comparisons were made of α Ceti, 192 of U Camelopardali, and 1,984 of double stars with a second photometer adapted to the comparison of stars too near together to be measured with the first instrument. The same instrument has been used in the photometric measurement of Jupiter's satellites while undergoing eclipse. 17 eclipses have been observed, making the total number 719. The light of the Planet Eros was determined photometrically on 50 nights, the number of settings being 2,456. The Planet Tercidina was also measured on 3 nights, and Vesta on 5 nights, the number of settings being 224 and 192, respectively. Photometric observations of comparison stars for variables have also been continued, the number of settings being 1,512. 312 relative estimates have also been made. The systematic observation of variable stars of long period throughout their changes, and the reduction of the results to the scale of the meridian photometer, have been continued. A few estimates by the method of Argelander have been made, generally when the stars were too faint to be observed with small instruments. The selection and measurement of twelfth magnitude standards and the selection of fourteenth magnitude standards have been continued. Several other objects of a miscellaneous character have also been observed.

Similar observations of variables and comparison stars have been made with the West Equatorial. With it 961 estimates of variables, 61 estimates of comparison stars, and 81 estimates of Nova Persei, No. 2, have been made by Miss Cannon. 163 estimates of variables have been made by Mr. Colson, and 65 by Mr. White. 82 estimates of Nova Persei, No. 2, have also been made by Mr. Colson. 2,386

estimates of variables, and 238 estimates of the Nova have been made by Mr. Campbell with a field-glass and with the naked eye. 132 estimates of the Nova were made by Mr. Dunne with an opera glass and with the naked eye. 651 estimates of variables and of the Nova have been made by Mr. F. E. Seagrave of Providence, and communicated by him to this Observatory. Observations of variables have also been communicated by Mr. John H. Eadie of Bayonne, N. J., by Mr. Zaccheus Daniel of Lewisburg, Pa., and by Señor Manuel Pereira of St. Michaels, Azores.

Meridian Circle. — Observations of zone stars, fundamental stars, and almanac stars were made on 12 nights, for the purpose of comparing the results found with the present apparatus of spider lines and declination micrometer with those formerly obtained with ruled glass plates. The work of one night was merely experimental, and not reduced; the rest was reduced and prepared for publication as Vol. XLI, No. VII, of the Annals of the Observatory. The observations comprised in all, 77 of fundamental stars, 212 of zone stars, and 63 of almanac stars. Observations of the Planet Eros were made by Mr. Dunne on 8 nights, during which there were 37 observations of comparison stars, and 65 of clock stars. Mr. Dunne also observed Nova Persei, No. 2, on 5 dates early in 1901, and on 8 dates six months later. This work includes 109 observations of clock stars. Additional observations were made for clock error and to determine other instrumental constants.

The reduction of the observations of stars in the zone — $9^{\circ} 50'$ to $-14^{\circ} 10'$ has progressed as follows: The corrections to the original values of $\Delta T + m$ and the polar point, required by the final places of the fundamental stars, have been computed for 1888, and those for the polar point also for 1890, 1891, 1892, and 1895. About two thirds of those for $\Delta T + m$ are computed for 1890 and 1891. The examination of the observations made during the years 1888 to 1892 inclusive, for large errors of reduction, is complete for eleven of the twenty-four hours of right ascension, and nearly complete for four and a half hours more. The observations made during the years 1896, 1897, and 1898, originally reduced with the final places of the fundamental stars, have all been reduced to 1900, so far as they relate to stars originally intended for observation. The precessions and secular variations of all these stars have also been computed. About one quarter of those relating to stars casually observed are now computed.

The reduction of the observations made by the late Professor Rogers during the years 1879 to 1883 has been continued by Miss

S. C. Bond under the supervision of Miss Anna Winlock. About two thirds of the reductions from apparent to mean place have been computed.

12-inch Meridian Photometer. — With this instrument 54,448 settings have been made by the Director on 126 nights. In all 198,672 settings have been made in three years. Although the observations have been maintained without interruption throughout the entire year, except for a few days at a time, the number is much less than in previous years. This is due to two causes: first, the extraordinary spell of cloudy weather from March to July; secondly, the faintness of the stars recently observed, which rendered their identification and measurement slower and much more laborious. The catalogue of 9,233 *Durchmusterung* stars was completed; and observations were made of 36 sequences of groups of stars of the twelfth magnitude. This work has also been completed and in a great measure reduced. Sequences have been selected for 67 of the variables contained in Series I, II, and III of Hagen's Catalogues, which, when observed, with the measures previously made, will permit the magnitudes of all the stars in this work to be reduced to the photometric scale. The Planet Eros has been observed on 56 nights, besides comparison stars and various miscellaneous objects.

Meridian Photometer. — With this instrument 33,316 settings have been made by Professor Solon I. Bailey on 98 nights. The total number of settings so far made with this instrument is 1,033,180. The principal work this year has been the observation of a catalogue of 376 standard stars of about the fifth magnitude, one in each region 10° square. A large part of these stars have been observed on ten nights, eight settings being made on each night. A large number of comparison stars for Eros and other similar objects have also been observed.

HENRY DRAPER MEMORIAL.

The number of photographs taken with the 11-inch Draper telescope was 673, making 13,435 in all with this instrument; with the 8-inch Draper telescope, 1,766, making the total number 27,656. The number of photographs of the stars taken at Cambridge during the year is 4,081. 9 eclipses of Jupiter's Satellites, and 5 occultations, have been successfully observed with the 11-inch Draper telescope. The number of objects having peculiar spectra, found by Mrs. Fleming from an examination of the photographs, is unusually small this year, as a large portion of her time has been devoted to the preparation of the Annals. Two new variables, three stars having

peculiar spectra, and the presence of bright hydrogen lines in the spectrum of U Andromedae have, however, been found. One variable has been found by the Director. Much time has been spent on the preparation of a volume of the *Annals*, which will contain photographic magnitudes of 195 variables discovered here, on all the photographs taken from 1885 to 1901, inclusive. The magnitudes and position of the comparison stars for these variables are nearly completed and will fill the greater portion of another volume. A variety of studies have been made of the New Star in Perseus. An examination of the early plates of the region showed that on February 19, 1901, two days before it was first seen, if then in existence it must have been fainter than the twelfth magnitude. By promptly photographing its spectrum on February 22 and 23, through thick clouds, remarkable evidence was obtained of the early condition of this body. A series of measurements of different portions of the continuous spectrum, and of the relative intensity of the bright lines, shows how much of the photographic brightness is due to each portion of the spectrum. The discovery of the variability in the light of Eros has added greatly to the value of the early photographs of this body, and will enable the period to be determined with great accuracy. Photographs of the spectrum of lightning were obtained last summer for the first time, with the Draper instruments. The resemblance to the spectra of new stars is curious, and the variation in different flashes is very instructive.

Mr. Edward S. King continues in charge of the work of taking and developing the photographs. Several novelties have been introduced. For example, the spectrum of Nova Persei, when within 10° of the horizon, has been photographed with an objective prism, the latter being turned by a computed amount so as to correct for the atmospheric refraction in declination. Photographs of stellar spectra have been shaded automatically, so that the ends are as intense as the centre, by interposing contact prints and porcelain screens.

In the systematic charting of the sky the 8-inch Draper telescope covers all parts north of declination $-12^\circ.5$ from two to four times a year; the Cooke lens covers all parts available at this latitude two or more times a month; and the Transit Photometer furnishes on every clear night a record of all stars crossing the meridian and visible to the naked eye. On the best plates of these three series of photographs the faintest stars visible are of about the thirteenth, twelfth, and sixth magnitudes, respectively. In extension of this scheme, work has been inaugurated with a small Ross-Zeiss lens

which covers a field about 60° square. An exposure of one hour shows stars as faint as the eighth magnitude; and all visible in a single night can be photographed by exposing seven plates. Similar series of photographs of the southern stars are taken at Arequipa.

BOYDEN DEPARTMENT.

The station at Arequipa has remained under the direction of Mr. H. C. Bailey. No further difficulties have been experienced in the transportation of the photographic plates. The shipments have been made by the Isthmus of Panama.

The number of photographs taken with the 13-inch Boyden telescope is 140, making 10,354 in all; and 2,269 with the 8-inch Bache telescope, making 28,608 in all. The total number of photographs taken this year at the Arequipa station is 4,269. 200 visual observations of 50 southern variable stars have been made, by Argelander's method, by Mr. R. H. Frost. The systematic examination of all stars south of declination -30° , between the magnitudes 6.3 and 7.0, inclusive, for the detection of new double stars, has been continued by Mr. Bailey. Only a few stars, which culminate during the cloudy season, remain to complete this work.

On January 1, for reasons stated in the last annual report, the outlying meteorological stations at Mollendo, La Joya, Vincocaya, Puno, and also the stations on El Misti, were discontinued. During the year 1900, self-registering wind instruments, devised and constructed by Sr. Muñiz, were used at these stations, in addition to the instruments heretofore employed. Good records of the direction and velocity of the wind were obtained. The Fergusson Meteorograph was installed during 1900 at the Mt. Blanc station, on the flank of El Misti. The records obtained, although by no means satisfactory, may yield results of value.

The discussion of variables in clusters has been carried forward by Professor S. I. Bailey. Besides the observations of the variable stars in α Centauri, mentioned elsewhere, the discussion of 50 photographs of the variables in Messier 3, and 100 photographs of those in Messier 5, is in progress. It has been found that 50 photographs of a cluster, if well distributed through a number of years, furnish, in general, sufficient material for the determination of the periods and light-curves of the variables. To complete this number of photographs for the remaining clusters, which are known to contain variables, about 200 plates are needed. These plates require long exposures, and must be followed with special skill. They are now

being taken at Arequipa with the 13-inch telescope by Mr. Frost. Many of the variable stars in Messier 3 and Messier 5 have a period of about half a day, and the light changes are rapid and striking. A large number of the measurements of brightness have been made by Miss E. F. Leland.

BRUCE PHOTOGRAPHIC TELESCOPE.

The Bruce photographic telescope has remained during the year under the special care of Dr. DeLisle Stewart, assisted by Mr. Frost. During the year, 919 plates have been taken with this instrument, making 5,686 in all. Many photographs of Eros, the planets, comets, and other special objects have been obtained. 906 exposures on Eros have been made on 172 plates on 131 nights, and 91 exposures on comparison stars for Eros. From an examination of 343 plates, Dr. Stewart has found 298 new nebulae, of which 9 are spiral, and 3 ring nebulae. Also, a number of known nebulae have been shown by these photographs to be spiral, or ring, in form. 29 asteroid trails have been photographed, and an unsuccessful search has been made for Swift's, Barnard's (1884, II), and Brorsen's periodic comets, the telescope being given a motion equal to that of these bodies.

BLUE HILL OBSERVATORY.

The work of the Observatory continues to be performed by three assistants who are paid and directed by Mr. Rotch. To the regular observations were added in 1901 semi-daily observations of audibility, and of the refraction of Mt. Wachusett. Between December and March, inclusive, nine kite-flights were made, in which the average height of the meteorograph above the sea was 7,275 feet, and the greatest height was 12,550 feet. The steam reeling apparatus has since been rebuilt to adapt it to longer wire of increasing size, which may enable greater heights to be reached. In order to obtain observations with kites in calm weather they were flown from a moving tug-boat in Massachusetts Bay on August 22, and afterwards from an eastward-bound transatlantic steamer. During a voyage of eight days, flights were made on five days; and the resulting meteorological observations are probably the first obtained at a considerable height above the Atlantic Ocean. More important was the demonstration that kites can be flown from a steamer in almost all weather conditions, since it opens an extensive field, especially in the tropics, for

researches with them. A card catalogue has been compiled of the books and pamphlets at the Observatory, there being about 500 of the former and 3,000 of the latter. Periodicals and volumes of observations are not included.

MISCELLANEOUS.

Library. — The Library of the Observatory has been increased by 361 volumes and 1,257 pamphlets. The total number of volumes and pamphlets in the Library on October 1, 1901, were 10,077 and 16,206, respectively. 6 volumes and 8 pamphlets have been deposited in the Harvard College Library. Special efforts are being made to render the meteorological, as well as the astronomical, collection of publications here, as well as at Arequipa, as complete as possible. Owing to the number of buildings connected with the Observatory, duplicates of important publications are in constant use. Every year the need of more space for books is becoming more urgent.

Telegraphic Announcements. — During the last year 16 bulletins have been issued, making 88 in all. The bulletins are sent gratuitously to all such institutions, newspapers, and individuals, as desire them and are likely to make use of them. In general, when a cipher telegram is received at the Observatory, it is translated, printed by an autographic process upon the bulletin sheets, and mailed within about an hour of the receipt of the original message. Several persons are prepared to take charge of the distribution, so that in the absence of one, another is available. Of the 16 messages distributed this year, 6 were received from Professor Kreutz, Kiel, 5 from the Lick Observatory, 1 from Carleton College Observatory, and 1 from the Lowell Observatory. Of the remaining 3 messages, 1 originated at the Arequipa, and 2 at the Cambridge Station of this Observatory. The distribution of the announcements by telegraph is continued to such subscribers as wish to pay for the messages. Astronomers are requested, as heretofore, to send to this Observatory announcement of their discoveries for transmission to the observatories of Europe and America. To secure prompt attention, it is requested that all cablegrams be addressed, "Observatory, Boston," and all telegrams, "Harvard College Observatory, Cambridge, Mass." All correspondence relating to telegrams and announcements should be addressed to the Director.

Coöperation. — The selection and measurement of standards of faint stellar magnitudes by the Yerkes, Lick, McCormick, and Harvard

Observatories have been much interrupted by the observations of Eros and of the New Star, and by the absence of eclipse observers in Sumatra. All the standards of the twelfth magnitude have been selected here, and measured with the 12-inch Meridian Photometer.

Professor R. A. Sampson of Durham, England, has courteously agreed to coöperate with this Observatory in the discussion of the photometric observations of the Eclipses of Jupiter's Satellites, made here during the last twenty-two years. The value of the final work will in this way be greatly increased.

Dr. W. Doberck has kindly consented to make a second reduction of Sir John Herschel's observations of the light of the southern stars, so as to reduce them to the scale of the meridian photometer. This will add greatly to the value of the compilation of these magnitudes to be published shortly in the Revised Harvard Photometry.

To facilitate the observation of variable stars of long period, enlargements have been made of the Durchmusterung charts of the regions surrounding 69 of these objects. Each region 3° square is enlarged three times, so that the scale is $1' = 0.1$ cm. As stated in Circular No. 53, a sequence of comparison stars is entered in each chart, and copies are sent free of charge to all experienced observers who are willing to coöperate with us in their observations. Other copies are sold at cost.

Long Focus Telescope. — The expedition to Mandeville, Jamaica, in charge of Professor W. H. Pickering, returned last summer, after a stay of about a year. The long focus telescope is, therefore, again in Cambridge. Apparently, an instrument of this form is not well adapted to the study of the stars, unless it can have a much larger angular aperture. Accordingly, its principal use has been the collection of the material for a Photographic Atlas of the Moon. Sixteen regions are shown, each under five different illuminations. The scale is $5'' = 0.1$ cm., so that the diameter of the Moon would be about fifteen inches.

Distribution of Annals. — 288 circulars were returned out of 542 issued last year to correspondents of the Observatory, asking which volumes of our Annals were contained in their libraries. Only 20 reported that their sets were complete. Nearly two thousand volumes, weighing about two tons, were accordingly distributed, completing 74 sets and making additions to 159 others. In many cases all of our volumes relating to Meteorology were sent to meteorological observatories. Few copies of the first twenty volumes of the Annals are now available for distribution.

Publications. — Volumes XXVIII, Part II, XXXVII, Part I, XLI, No. VI, XLIII, Part I, and XLV of the *Annals* have been published and distributed. Volume XXXVII, Part II, Fifty-eight Variable Stars of Long Period, is being published in the same form as Part I of this volume, and 16 pages are in type. Volume XXXVIII, Variable Stars in the Cluster α Centauri, will contain measures of the photographic brightness of 128 variable stars, on 124 plates. 165 pages are in type, and nearly all of the remainder of the manuscript is in the hands of the printer. Volume XLI, No. VII, Comparison of Results obtained with different forms of Apparatus in Meridian Observations, is in type, and is ready to be printed and distributed. Volume XLIII, Part II, containing Observations of the Blue Hill Meteorological Observatory, during the years 1899 and 1900, and a Summary of the Results from 1896 to 1900, is in course of publication, 29 pages being in type. A portion of Volume XLIV, Part II, Constants used in the Reduction of Observations made with the Meridian Photometer during the years 1891 to 1898, has been sent to the printer, but has not yet been put in type. 39 pages of Volume XLVI, containing Observations of Southern Stars, made with the Meridian Photometer in 1899, are in print. The first forty-five volumes of the *Annals* are now complete with the exception of Volumes XXXVII, XXXVIII, XXXIX, XLI, XLIII, and XLIV. The first portions of all these volumes, except Volume XXXVIII, have been distributed, and portions of all of them, except Volumes XXXIX, and XLI, are now in the hands of the printer.

Nine Circulars have been issued during the year. These are not given a general distribution, but are sent to editors of periodicals who wish to reprint them, and to all persons who wish to prepare notices of them for newspapers or periodicals. The numbers, titles, and dates of the nine Circulars mentioned above are as follows: —

53. Coöperation in observing Variable Stars. January 16, 1901.
54. Sixty-four new Variable Stars. January 24, 1901.
55. The Spectrum of γ Puppis. February 11, 1901.
56. Anderson's New Star in Perseus. February 27, 1901.
57. Nova Persei, No. 2. March 15, 1901.
58. Variability in Light of Eros. April 24, 1901.
59. Spectrum of Nova Persei, No. 2. June 6, 1901.
60. Objects having Peculiar Spectra. July 6, 1901.
61. Opposition of Eros (433) in 1903. August 10, 1901.

The following other minor publications have also appeared during the year : —

Fifty-fifth Annual Report of the Director of the Astronomical Observatory of Harvard College. Cambridge, 1900.

The Planet Eros. By Solon I. Bailey. *The Popular Science Monthly*, lviii, 641.

An Error in the American Ephemeris. By W. H. Pickering. *Popular Astronomy*, ix, 373.

Nova Persei. By W. H. Pickering. *Astrophysical Journal*, xiii, 277.

Electrical Action of Slides. By Edward S. King. *Photo Era*, vii, 104.

Position of Nova (3.1901) Persei. By Edward C. Pickering. *Astron. Nach.*, clv, 153.

Hisgen's Variable (13.1900) Cygni. By Edward C. Pickering. *Ibid.*, clv, 245.

A Photographic Search for Periodic Comets. By Edward C. Pickering. *Ibid.*, clv, 247.

Nova (3.1901) Persei. By Edward C. Pickering. *Ibid.*, clvi, 233.

Endowment of Research. By Edward C. Pickering. *Science*, xiii, 201.

EDWARD C. PICKERING, *Director*.

THE MUSEUM OF COMPARATIVE ZOÖLOGY.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

During the past academic year the regular courses in Zoölogy, Geology, Geography, and Meteorology were given in the Natural History Laboratories of the Zoölogical Section (Museum of Comparative Zoölogy) of the University Museum. It was hoped that the new southwest corner piece, the Geological Section, would be completed, so that the departments of Geology, Geography, and Meteorology would take possession, at the beginning of this academic year, of the laboratories and lecture rooms provided for them, and vacate the rooms now occupied, which are much needed by the Department of Zoölogy. As the building has not been completed, the routine work of instruction will begin as before.

Ten courses in Zoölogy were given by Professors Mark, Jackson, and Parker, and Drs. Castle and Rand, assisted by Messrs. Breed, Davis, Johnson, Ordway, and five Sub-Assistants. These courses were attended by two hundred and thirty-one students. Six courses in Zoölogy were given to forty-two students of Radcliffe College.

Eighteen courses under the Geological Department were given by Professors Shaler, Davis, Jackson, Ward, and J. B. Woodworth, Drs. Jaggar and Daly, and Mr. Woodman, assisted by Messrs. Boynton, Stone, Wilder, and five Sub-Assistants. The courses were attended by five hundred and forty-eight students. Six courses were given to thirty-six students of Radcliffe College.

The Summer School of Geology, held in the Museum, was attended by thirty-three students in two courses, given by Mr. H. T. Burr, assisted by Mr. C. H. Morrill.

In recognition of his long service in successful administration of the instruction in Zoölogy under the Faculty of Arts and Sciences, Professor E. L. Mark has been appointed by the Corporation of the University Director of the Zoölogical Laboratory.

The principal addition to the exhibition collections has been a series of Japanese siliceous sponges for the Pacific room. A number of birds have been added to the faunal and systematic series, and a fine specimen of the Snow Leopard of Thibet has been placed in the Europaeo-Siberian room. An additional case has also been constructed in this room. It is hoped that when the next report is

issued the exhibit of palaeozoic invertebrates will be open to the public, as considerable progress has been made in preparing the material for this exhibit. The Museum Assistants report the storage collections to be in excellent condition. In some departments the accessions have been of unusual value.

The installation of the large Bangs collection of mammals is now complete, and the old Museum collections have been incorporated with it in a separate room. Mr. Bangs has given much of his time to this work. A large and valuable series of South American mammals has been received from the Messrs. Bangs. The expenses of installing the Bangs collection were partly met by an appropriation of five hundred dollars from the Corporation of the University, applied toward the construction of storage cases.

Most important of the additions to the Department of Ornithology are the collections from the Hawaiian and Liu Kiu Islands. The latter collection contained a number of new forms, and has been reported on by Mr. Bangs in the "Bulletin" of the Museum.

There have been many gifts to the collection of recent invertebrates, among which are the Emerton collection of spiders, and the series of American ants from Professor W. M. Wheeler. From Mr. F. Du Cane Godman, through the British Museum, there has been received a set of duplicates of the land and fresh-water Mollusca of the *Biologia Centrali-Americana*. A representative collection of the rich siliceous sponge fauna of Japan has been received from Mr. Agassiz. This exceptionally fine material has been mounted, and forms part of the exhibit of the Pacific room. Mr. Agassiz has also given to the Museum a large collection of alcoholic Japanese Marine radiates. From the U. S. National Museum has been received a duplicate series of the "Albatross" (1891) ophiurans reported on by Lütken and Mortensen in the "Memoirs" of the Museum. The "Blake" Bathynomus material has been returned by Professor Bouvier, whose report will appear in the "Memoirs." The Museum leeches have been sent to Professor Percy Moore of Philadelphia for study.

Dr. Eastman has again gone West in the interests of the Museum. His expedition of last year resulted in important additions to our palaeozoic fishes, and he reports having secured valuable new material for his department.

The most important addition to the collections of the Museum is Mr. Agassiz's gift of the Davis and McConathy collections of palaeozoic corals. The Davis collection comprises more than eight thousand lots, the majority of which are the types of Major Davis's

work on the "Kentucky Fossil Corals." Major Davis spent two months at the Museum in installing these collections.

From Dr. J. M. Flint has been received a "Class Microscope" devised by him, and equipped with a rotary stage carrying about three hundred mounts of recent Foraminifera. The instrument is designed for exhibition purposes, and will be installed as soon as practicable.

Mr. Henshaw reports that the accessions to the library are greater than those recorded in recent years. A complete change has been made in the arrangement of the stacks, the large northwest room being devoted exclusively to serials arranged alphabetically under the geographical divisions adopted throughout the Museum. The two rooms of the Whitney Library have been assigned, one to geological and geographical serials and the other to the publications of geological surveys and to maps. Upwards of two hundred volumes and pamphlets treating of Ethnology have been transferred to the Peabody Museum, and nearly as many botanical works to the Gray Herbarium and the special libraries of the departments of Botany. Many duplicates have been transferred to the general library of the University. By a vote of the Council of the University Library upwards of five hundred geological volumes and pamphlets were transferred from Gore Hall to the library of the Museum. It is earnestly hoped that the officers of the central library will continue this policy and in time transfer to the Museum stacks such books in other departments of natural history as are not on our shelves. Such a segregation would make the Museum library the most complete of its kind and one of the strongest departments of the University. It would facilitate the work of students, and add much to the utility of the books and efficiency of the Museum, since books on systematic natural history are of little use apart from the collections of which they treat.

From Walter Hunnewell, Esq., the Museum has received the sum of five thousand dollars, given in memory of his son, Willard Peele Hunnewell, of the Class of 1904. By a vote of the Museum Faculty the income of this fund will be employed for the purchase of books on Entomology.

Eight numbers of the "Bulletin" were issued during the year, comprising 383 pages and 74 plates. No numbers of the "Memoirs" were published. The issues of the "Bulletin" include Dr. Stejneger's descriptions of lizards, No. XXVIII, "Albatross" expedition of 1891, and Mr. Andrew's report on his work for Mr. Agassiz on the geology of the Fiji Islands (Vol. XXXVIII, Geol. Ser., Vol. V); two

by attendance on the lectures of the course. This regulation has made the supervision of the laboratory work more methodical and efficient than when students were allowed to separate the hours of attendance, and it is not known to have obliged any student to give up the course. Professor Parker had as Chief Assistant, Mr. R. S. Breed, and as Sub-Assistants, Messrs. H. S. Davis, J. M. Johnson, and T. Ordway. The course was taken as an "extra" by four students not enumerated in the table.

The laboratory work in Zoölogy 2 embraces the dissection and study of some ten or twelve types of animals, and varies somewhat from year to year, according to the selection of forms made for work in Zoölogy 1. The course was given substantially as in former years. Dr. Castle had as Chief Assistant, Mr. H. Crawley. Mr. W. P. Hager was Sub-Assistant during about three-fourths of the course, and Mr. G. M. Allen during one-fourth. Owing to the fact that none of the assistants had had previous experience in assisting in this course, the instructor was compelled to devote more time than he ordinarily does to personal supervision of the laboratory work.

The work in Zoölogy 4 was carried on as in former years. The laboratory was in charge of Dr. Rand, who also gave five lectures on the anatomy of *Glossiphonia*, — the animal used in studying various matters of technique. The remaining lectures of this course and those in Zoölogy 5 were given by Professor Mark. In the latter course Dr. Rand had charge of the laboratory work.

The courses in Experimental Morphology were resumed, Dr. Castle, who is to give both these courses, having begun with Zoölogy 10, Ontogenesis. In the lectures were discussed the physical and chemical peculiarities of living substance, and the effect upon it and its activities of various agents, such as chemical agents, heat, light, gravity, etc. The special topic of sex in animals and plants was also discussed at some length. Among the special topics for experimental work assigned to students were: acclimatization to high temperatures; the effects of increased and diminished atmospheric pressure; the effect of close breeding in the case of some invertebrates; and certain questions connected with the determination of sex.

The half-course, Zoölogy 13, on Comparative Histology, with special reference to the nervous tissues, was given for the first time. The study of epithelium as a primitive tissue was followed by that of the derived tissues, nerve and muscle. There were two lectures a week, and the students each made and studied twenty

preparations involving the use of modern methods in muscle and nerve histology. Professor Parker gave the course, without the aid of an assistant.

In Zoölogy 16, carried on as usual by Professor Parker, laboratory work, opportunity for which was given to a few students in the previous year, was made obligatory for all who chose the course. It consisted in the investigation of special topics, one being assigned to each student. Of the results from the eight topics assigned, three will probably be offered for publication. The lectures were attended by three graduate students not enrolled.

There were ten students engaged in research (Zoölogy 20a) under the supervision of the Director of the Laboratory. Three of these completed their work, and, as candidates for the Doctor's degree, presented theses which were accepted. The theses of two others were nearly completed, and will be presented for acceptance early in the coming year.

Mr. G. M. Allen began studies on the degenerate eyes of some common mammals; Mr. R. S. Breed continued with excellent results his problem in insect metamorphosis; Mr. H. Crawley wrote a paper on the absorption of fat by a common newt, which secured one of the Boylston Prizes offered by the Harvard Medical School, and continued his studies on gregarines; Mr. C. A. Crowell made interesting discoveries on the growth of the ovum in reptiles; Mr. H. S. Davis worked on spermatogenesis, and Mr. J. M. Johnson on the nervous system of one of the Entomostraca; Mr. A. W. Peters, in connection with his studies on the metabolism of Infusoria, devised some valuable apparatus and methods for rearing and handling minute organisms, a description of which has been published as No. 124 of the Contributions. The work of Mr. P. E. Sargent on Reissner's Fibre has been continued, and a second preliminary paper, No. 122 of the Contributions, published; that of Mr. W. A. Willard was nearly completed, and promises to be a valuable contribution to the knowledge of cranial nerves. Mr. C. W. Woodworth has completed an extensive work on "The Wing Veins of Insects." He returns next year to the chair of Entomology in the University of California. Mr. Willard has assumed for next year the duties of the Professor of Biology in Grinnell (Iowa) College, in the latter's absence.

In June, 1901, the degree of Doctor of Philosophy was conferred upon the three following candidates in Zoölogy: Mr. Maurice Alpheus Bigelow, whose thesis was entitled "The Early Development of *Lepas*, a Study of Cell Lineage and Germ Layers"; Mr.

Robert William Hall, thesis, "The Development of the Mesonephros and the Müllerian Ducts in Amphibia"; and Mr. Reuben Myron Strong, thesis, "The Development of Color in the Definitive Feather." Dr. Bigelow holds the position of Instructor in Biology in the Teachers College, Columbia University, and Dr. Hall that of Assistant in Biology in Yale University. Dr. Strong takes a position in the Chicago University Academy, Morgan Park, Ill.

Dr. Charles W. Prentiss has been appointed, upon the recommendation of the Division of Biology, to a Parker Fellowship for the year 1901-02, and has already sailed for Europe, where he will pursue zoölogical investigations.

The income of the Virginia Barret Gibbs Scholarship for 1900-01 was divided between two students, Mr. Frederic W. Carpenter and Mr. Julius M. Johnson, both registered in the Graduate School. Thirteen persons, instructors and advanced students, have availed themselves of the opportunity for study afforded by the Laboratory of the U. S. Fish Commission at Woods Hole. Of these, nine have received aid from the income of the Humboldt Fund.

The meetings of the Zoölogical Club were held as usual throughout the year from 4.30 to 6 o'clock, but on Friday afternoons instead of Thursday, as in the preceding year.

Since the last report was made, Contributions Nos. 113-125 have been published. Appended is a list of —

CONTRIBUTIONS FROM THE ZOÖLOGICAL LABORATORY FOR THE ACADEMIC YEAR 1900-01.

113. BOWERS, MARY A. — Peripheral Distribution of the Cranial Nerves of *Spelerpes bilineatus*. *Proc. Amer. Acad. Arts and Sciences*, Vol. 36, No. 11, pp. 177-193. 2 pls. October, 1900.
114. FOLSOM, J. W. — The Development of the Mouth-Parts of *Anurida maritima* Guér. *Bull. Mus. Comp. Zoöl.*, Vol. 36, No. 5, pp. 85-157. 8 pls. October, 1900.
115. PARKER, G. H., and BURNETT, F. L. — The Reactions of Planarians, with and without Eyes, to Light. *Amer. Jour. Physiol.*, Vol. 4, No. 8, pp. 373-385. 4 figs. December, 1900.
116. YERKES, R. M. — Reaction of Entomostraca to Stimulation by Light. II. Reactions of *Daphnia* and *Cypris*. *Amer. Jour. Physiol.*, Vol. 4, No. 8, pp. 405-422. 6 figs. December, 1900.
117. GALLOWAY, T. W. — Studies on the Cause of the Accelerating Effect of Heat upon Growth. *Amer. Naturalist*, Vol. 34, No. 408, pp. 949-957. 6 figs. December, 1900.

118. PARKER, G. H. — Correlated Abnormalities in the Scutes and Bony Plates of the Carapace of the Sculptured Tortoise. *Amer. Naturalist*, Vol. 35, No. 409, pp. 17-24. 5 figs. January, 1901.
119. YERKES, R. M. — A Study of Variation in the Fiddler Crab *Gelasimus pugilator* Latr. *Proc. Amer. Acad. Arts and Sciences*, Vol. 36, No. 24, pp. 415-442. 3 figs. April, 1901.
120. PARKER, G. H., and ARKIN, L. — The Directive Influence of Light on the Earthworm *Allolobophora foetida* (Sav.). *Amer. Jour. Physiol.*, Vol. 5, No. 3, pp. 151-157. 1 fig. April, 1901.
121. STRONG, R. M. — A Quantitative Study of Variation in the Smaller North-American Shrikes. *Amer. Naturalist*, Vol. 35, No. 412, pp. 271-298. 8 figs. April, 1901.
122. SARGENT, P. E. — The Development and Function of Reissner's Fibre, and its Cellular Connections. *Proc. Amer. Acad. Arts and Sciences*, Vol. 36, No. 25, pp. 443-452. 2 pls. April, 1901.
123. PRENTISS, C. W. — The Otocyst of Decapod Crustacea: Its Structure, Development, and Functions. *Bull. Mus. Comp. Zool.*, Vol. 36, No. 7, pp. 165-251. 10 pls. July, 1901.
124. PETERS, A. W. — Some Methods for Use in the Study of Infusoria. *Amer. Naturalist*, Vol. 35, No. 415, pp. 553-559. 2 figs. July, 1901.
125. PRENTISS, C. W. — A Case of Incomplete Duplication of Parts and Apparent Regulation in *Nereis virens* Sars. *Amer. Naturalist*, Vol. 35, No. 415, pp. 563-574. 6 figs. July, 1901.

E. L. MARK, *Director*.

DEPARTMENT OF GEOLOGY AND GEOGRAPHY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The instruction given in the Department of Geology and Geography during the academic year 1900–01 was essentially the same as during the preceding year, with the exception of the usual changes involved in the bracketing and unbracketing of certain courses given in alternate years, and the addition of a new course in Meteorology (Geology 1). Courses were given by Professors Shaler, Davis, and Smyth, Assistant Professors R. T. Jackson, Ward, and Woodworth, and Drs. T. A. Jaggar, Jr., and R. A. Daly. Mr. J. E. Woodman assisted in Courses 4, 5, and 8; Mr. H. C. Boynton, Austin Teaching Fellow in Geology, in Courses 5 and 16; Mr. R. W. Stone in 14, and Mr. F. M. Wilder in *B*. In addition, Messrs. G. C. Johnson, L. H. Woolsey, J. W. Goldthwait, W. L. Estabrook, and C. T. Whitney served as student-assistants in the laboratory and field-work of Geology 5, under Professor Woodworth's direction.

The elementary summer course in Geology was given by Mr. J. E. Woodman, and the summer course in Geography was given, on the same lines as in previous years, by Mr. H. T. Burr, a recent Harvard graduate and at present instructor in the State Normal School, New Britain, Conn. Mr. Burr was assisted by Mr. C. H. Morrill. Professor Shaler also gave some lectures in the summer course in Geology, and Professor Davis gave six lectures in the first week of the course in Geography.

In the spring of 1901 the Governor and Council of Massachusetts voted to deposit in the geological exhibition rooms, in the new south wing of the Museum, the large model of the Metropolitan District of Boston which was exhibited at the Paris Exposition. This model was constructed by Mr. G. C. Curtis, a former student in this Department.

A number of the advanced students in Field Geology passed creditably the United States Civil Service examination for the position of Assistant Geologist on the U. S. Geological Survey, held April 23 and 24, 1901, and were at once given field employment in Pennsylvania, Alaska, Massachusetts, and elsewhere. Some of these students were graduates of Course 22 only; others of both Courses 22 and 23. It is worthy of note that of the 46 successful applicants for this examination from all over the United States, 14 had received academic or graduate instruction at Harvard.

Professor Shaler's courses have been continued along the same lines as in previous years.

Professor Davis conducted the advanced course in Physiography (Geology 20) throughout the year, and the half course on the Physiography of the United States (Geology 6) through the second half-year; both courses having been carried on in the same way as heretofore. One student in the advanced course, Mr. A. W. G. Wilson, having spent the previous summer in field-work in Ontario, completed his thesis on the Physical Geology of Central Ontario during the winter, and received the degree of Ph.D. in Physical Geology at Commencement. Dr. Wilson has since then been appointed to a position on the Geological Survey of Canada. Another student, Mr. G. D. Hubbard, made special studies on fiords and on certain other coastal features; he has been appointed instructor in Physiography at the State Normal School, Charleston, Ill. Professor Davis's own studies have been directed chiefly to a report on the Grand Cañon district of Arizona, which he had visited during the summer of 1900, and to the problem of river terracing as illustrated in the valleys of New England. During the past summer Professor Davis made a second brief visit to the Colorado Cañon, to extend his observations of the preceding year.

Professor R. T. Jackson gave his usual courses in Palaeontology during the year. He reports that the Palaeontological teaching collections are in good condition. No important additions of material have been received. A microscope with accessories was purchased of Bausch and Lomb; also objectives and eye-pieces for two old stands.

Professor Ward conducted the elementary course in Meteorology (Geology B) and the two half-courses in Climatology (Geology 19 and 25) as in previous years. A new intermediate half-course in Meteorology (Geology 1) was given during the first half-year for the first time, and was taken by 12 students. One graduate student in the course in General Climatology (Geology 19), Mr. G. D. Hubbard, made a special study of the Meteorological Conditions of the Antarctic, and an abstract of his thesis was published in the *Journal of School Geography* for June, 1901, pp. 161-170. Another graduate student, Mr. R. M. Brown, undertook a study of the Effects of Climate on Railroad Construction and Operation, the results of which will also be published. The most important additions to the laboratory materials for use in the courses in Meteorology and Climatology were two large-scale colored charts, one of equal annual ranges of temperature and one of mean annual rainfall. Professor

Ward has continued his work on the English translation of Hann's *Handbuch der Klimatologie*, which will be published in 1902. Instruction in the courses in Meteorology and Climatology has been given at a considerable disadvantage in the past because of the fact that the collection of publications on these subjects in the College Library is very incomplete. This condition of things is being remedied as rapidly as possible by the purchase of the most important of the volumes hitherto lacking.

Professor J. B. Woodworth gave instruction in Courses 5, 8, 16, and 23, and in two half-courses in Elementary Geology to students enrolled in Radcliffe College. Under his direction, Mr. H. C. Boynton rearranged a large part of the reserved collection of rocks in the Geological Laboratory. He reports the addition of several specimens to the collection, notably through the gift of a series of rocks from the Vesuvian district by Mr. J. Y. Bergen. Professor Woodworth's geological investigations during the year have been conducted in New York State, and parts of Canada, and Vermont, as in the previous year, in connection with the New York State Museum. In February, Professor Woodworth, at the request of the Director of the U. S. Geological Survey, attended a meeting of the American Institute of Mining Engineers at Richmond, Va., as a delegate of the Survey. Leave of absence for this purpose was granted him by the Acting President of the University. On July 1st, Professor Woodworth was regularly appointed an Assistant Geologist of the U. S. Geological Survey, under Civil Service Rules, for such expert work as he may have time to do. During the year reports have been prepared on the triassic coals of the Atlantic slope, for the U. S. Geological Survey, and in the pleistocene geology of parts of New York for the N. Y. State Museum.

Dr. T. A. Jaggar reports that Geology 22 (Geological Field-work) has doubled its attendance from five students in 1899-1900 to ten in 1900-01. The work accomplished by the class was an accurate geological map of the Middlesex Fells, made on a large-scale topographical base of the Metropolitan Park Commission. The same plan was followed as in 1899-1900, the students mapping an area in the fall and investigating a topic in the spring. The work of this class is now definitely organized for eventual publication by the U. S. Geological Survey. An appropriation for compiling the work has been made, and the preparation of a geological folio comprising the Boston and Boston Bay quadrangles assigned to Dr. Jaggar by the Director of the Survey. Course 17 (Experimental Geology) was given to seven students. The laboratory accommodations were

extended, and the series of laboratory experiments made more systematic and thorough than heretofore. New experiments were made on erosion, joints, and deformation of strata. Mr. A. W. G. Wilson completed during the year, for publication by the Boston Society of Natural History, his work on the Geology of the Medford Dike. Mr. R. W. Stone, in Course 28, made a field experimental study of Erosion Movements in the Mystic Valley, and supplemented this in the spring by a series of laboratory experiments on erosion in miniature, which were successful. During the winter a paper on the intrusive character of the melaphyr of Brighton, by H. T. Burr, was published by the Museum of Comparative Zoölogy. Dr. Jaggar has been appointed Assistant Geologist in charge of the Bradshaw Mts. Quadrangle of Northern Arizona, the work being concerned with mapping and studying the economic geology of this copper and gold mining district for the U. S. Geological Survey.

Dr. R. A. Daly spent the summer of 1900 in a geographical and geological reconnaissance of the northeast coast of Labrador, a report of which has appeared as a Bulletin of the Museum of Comparative Zoölogy. During the first half-year, he conducted the elementary course in Physiography (Geology A) and in the second half-year the course on Oceanography (Geology 11). Dr. Daly also gave a course of lectures in Radcliffe College on the Physiography of the United States (Geology 6) which was parallel to the course in the same subject given by Professor Davis to students of Harvard University. A beginning was made on the petrographic study of the collections of volcanic island rocks from the Pacific, now systematically arranged in the Museum. In June, 1901, Dr. Daly tendered his resignation as Instructor in Geology, in order to assume the position of geologist on the Canadian Commission appointed to re-mark the boundary between the United States and Canada.

Mr. J. E. Woodman continued during the year his work upon a report on the geology of parts of Nova Scotia. Mr. H. C. Boynton, Austin Teaching Fellow in Geology, was engaged during the summer vacation in mining exploration in the region north of Lake Superior.

The Committee having in charge the Gardner Collection of Photographs (Professors Woodworth and Ward, and Dr. Daly) report that 4,875 photographs and 3,006 stereopticon views are now catalogued. The chief additions during the year were a set of Wyoming views purchased of Professor Wilbur C. Knight; 80 Austrian photographs; and a set of photographs and lantern slides donated by John L. Gardner, Jr. A friend of the department gave \$100, by means of which a large series of Norwegian photographs was added to the

collection. The Committee wishes to take this opportunity to express its peculiar indebtedness to Dr. Hans Reusch of Christiania, late Sturgis-Hooper Professor of Geology, for valuable assistance in obtaining these photographs. Mr. J. E. Woodman was employed to catalogue and care for the collection.

The following Publications by Officers of the Department were issued during the year.

By W. M. DAVIS:—

Notes on the Colorado Cañon District, *Amer. Journ. Sci.*, x, 1900, pp. 251-259.

An Excursion to the Grand Cañon of the Colorado. *Bull. Mus. Com. Zööl.*, xxxviii, 1901, pp. 107-201.

An Excursion in Bosnia, Herzegovina, and Dalmatia. *Bull. Geogr. Soc. Phila.*, iii, 1901, pp. 21-50.

The Geographical Cycle. *Verh.* vii, *Internat. Geogr. Kong.* Berlin, 1900, 11, pp. 221-231.

Physical Geography in the High School. *School Review*, viii, 1900, pp. 388-404; 449-456.

Practical Exercises in Physical Geography. *Proc.* v, *Ann. Conf. N. Y. State Teachers and Science Teachers Assoc.*, 1901.

The Causes of Rainfall. *Journ. N. E. Water Works Assoc.*, xv, 1901, pp. 338-350.

Geographical Bibliography for the United States. *Ann. de Geogr.*, x, *Bibl. Geogr. Annuelle*, 1900.

Current Notes on Physiography. *Science*.

By R. DEC. WARD:—

Current Notes on Meteorology in *Science* throughout the year. Reviews in *Science*, *Journal of School Geography*, and *Harvard Graduates' Magazine*.

By J. B. WOODWORTH:—

Original Micaceous Cross-Banding of Strata by Current Action. *Amer. Geol.*, xxvii, 1901, pp. 281-283.

By T. A. JAGGAR, JR.:—

The Laccoliths of the Black Hills; with a chapter on Experiments in Intrusion and Erosion by Ernest Howe. *Twenty-first Annual Report Director U. S. Geological Survey*, 1901. Part III, pp. 163-303.

By R. A. DALY:—

The Physiography of Acadia. *Bull. Mus. Comp. Zööl.*, Vol. xxxviii, March, 1901, pp. 73-104, 11 plates.

Notes on Oceanography. *Science*. Nov. 2, 1900, and June 14, 1901.

ROBERT DEC. WARD, *Chairman*.

THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—In making my report on the progress of the Museum during the past year, I am glad of the opportunity to acknowledge the many far-reaching and important results in American Archaeology that have accrued to the benefit of the Museum through the Fund for the Encouragement of Mexican and Central American Research. This Fund, which is maintained by the yearly contributions of a few generous patrons, has enabled the Museum to carry on research in various sections of Yucatan and Central America for twelve years. During the past year we have continued the work of Mr. Thompson in Yucatan; of Mr. Maler in the Usumasinta (or Usumatsintla) Valley, partly in Mexico and partly in Guatemala; and of Mr. Gordon in Copan and Quirigua. In addition to these expeditions the Fund has furnished the means for publishing a series of illustrated quarto memoirs, thus making known some of the important results of the several expeditions. We are just issuing the latest of these memoirs, Vol. II, No. 1, under the title, "Researches in the Central Portion of the Usumatsintla Valley," by Teobert Maler. This work includes Mr. Maler's report on his researches at La Reforma, Chinikihá, Cháncala, Xupá, Pethá, and Piedras Negras, and contains his map of the Central Usumasinta Valley and his plan of the hitherto unknown ruins at Piedras Negras. This memoir is illustrated by thirty-one heliotype plates from photographs and by several figures in the text. The memoir also includes a description of Mr. Maler's meeting with the little known Lacandon Indians of Lake Pethá.

By means of this Fund we have also published Mrs. Nuttall's work on "The Fundamental Principles of Old and New World Civilizations," as Vol. II of the Museum Papers. This instructive comparative research is based on the results of Mrs. Nuttall's study, for thirteen years, of the ancient Mexican religious, sociological, and calendrical systems. Having determined the astronomical origin of the swastika in Mexico, the author was led to make researches along the same lines in the Old World, and following one ancient civilization to another, she finds in connection with the swastika a certain phase of culture based on pole star worship, and having the quadruple

organization in the cosmos and in the plan of earthly government. In other words, the swastika is used as a symbol of the Four Quarters, and of the stable central Power "whose rule extended in four directions and controlled the entire Heaven"; in these same ancient Old World cultures the cities are divided into four parts, the population into four tribes, and all are under the control of one central ruler. In each case the pole star is worshiped as the divine, central, stable Power.

One of the important deductions that the author is led to make from her comparative study is in relation to the origin of certain phases of ancient culture in the New World. Although refraining from any theories on a subject which is now being so widely investigated, she nevertheless ventures to make the following statement in her summary of conclusions: "It will seem that the outcome of my researches corroborates the opinions differently expressed by a long line of eminent investigators, who have been constantly discovering and pointing out undeniable similarities and identities between the civilizations of both hemispheres." The book contains also valuable material for a comparative study of religious symbolism. The Museum is indebted to Mrs. Nuttall for the gift of her work, which embodies the results of so many years of scholarly research.

During the past year, Mrs. Nuttall has also been engaged in writing the Preface to the long-lost Mexican Codex which she has brought to light. A facsimile of this Codex has been reproduced by the Museum under the special supervision of Mrs. Nuttall, and it will be known as the Codex Nuttall. The Museum, through this Research Fund, will therefore add one more to the nine Mexican codices already known.

Mr. Gordon, after his return from Copan in the summer of 1900, was engaged in work on the specimens collected until November 5, when he again started for Copan, where he opened a number of mounds situated about two miles northeast of the main ruins. Mr. Gordon describes these mounds as being made of rough stones and earth, covering stone-built tombs. Many of these tombs were carefully made of squared stones; in some the roof being formed by the \wedge -shaped arch, and in others by flat stones resting on the vertical sides of the tomb; in still others the tomb was formed by flat stones so placed as to form a rude \wedge -shaped structure. Only traces of human skeletons and fragments of disintegrated and rude pottery were found. Leaving Copan, early in January, Mr. Gordon went to Quirigua, in Guatemala, where he secured moulds of six stelae and six altars and monolithic sculptures which had not been moulded

on former expeditions. He also took a full series of photographs of these sculptures. He made excavations under the fallen stelae to ascertain if they were built over cruciform structures similar to those found under some of the stelae at Copan; but none were found, and it is probable that the stelae at Quirigua were simply set into the ground.

Quirigua is on a flat plain, subject to inundations, and in places there is now a deposit of sand and gravel four feet in depth, covering the site of the ruins. These floods have also undermined the large stelae, some of which have fallen and others are leaning in a northeasterly direction, showing the course of the flood channels. It will be remembered that the largest monolithic sculptures known in America are found at this site. With the exception of two of the largest, which were moulded by Maudslay, the Museum now has the moulds of all the remarkable sculptures now remaining on this prehistoric site.

Mr. Gordon returned to Cambridge in June and has since been engaged in preparing a report on the Hieroglyphic Stairway at Copan, which will soon be issued as one of the series of Memoirs by the Museum. While in Guatemala, Mr. Gordon made a collection illustrating Indian arts and customs, and also secured a large collection of photographs of Indians.

Mr. Edward H. Thompson has completed his examination of the ruins at Chacmultun, from which place he has sent photographs and moulds and copies of mural paintings. Continuing his researches at Chichen Itza, he has found in the debris of the fallen portion of the Temple of the Tigers many of the missing stones from the sculptured room, by means of which he hopes to complete the restoration of a portion of the wall which fell long before it was described by Stevens. He has sent moulds of several of the colored caryatid-like sculptures found at this ruin. These we have had cast and colored like the originals. He has also sent moulds and photographs of other sculptures, including two hieroglyphic inscriptions which are of special interest since comparatively few hieroglyphs have been found at Chichen Itza. Mr. Thompson is now engaged in preparing his report on the ruins of Chacmultun. He has also sent to the Museum a paper on the manufacture of pottery by the present Maya Indians, comparing the method and materials with those of past times. It is accompanied by a series of photographs of the several processes of pottery making employed by the Mayas, and by a series of specimens of the materials used. This paper and also Mr. Thompson's report on his researches among the ruins of Chacmultun will be published by the Museum.

During the year the moulds sent by Mr. Thompson and Mr. Maler have been cast, as well as a few of those from Copan made by Mr. Gordon. Owing to lack of space to place the casts of the large sculptures of Quirigua and of the great Hieroglyphic Stairway of Copan, we are obliged to store these valuable moulds until the room is provided by the hoped-for completion of the Museum building.

The following are the subscribers, for the past year, to the Fund for the Encouragement of Mexican and Central American Research:—

Stephen Salisbury, Charles P. Bowditch, Augustus Hemenway, Francis C. Lowell, Mr. and Mrs. Henry Pickering, Miss Ellen F. Mason, Edward S. Grew, Mrs. G. G. Lowell, George A. Nickerson, Nathaniel Thayer, Elliot C. Lee, Miss Mary L. Ware, and Miss Caroline P. Stokes.

Miss Alice C. Fletcher, as holder of the Thaw Fellowship, has continued her studies on the Omaha and Ponka Indian ceremonies. An extended paper relating to the Omahas is soon to be published, with the permission of the Museum, by the Bureau of American Ethnology at Washington.

By the kind assistance of Mr. Bowditch, I was able to take with me to New Mexico Mr. A. M. Tozzer (A.B. 1900)—Winthrop Scholar and graduate student in this department—and to start him in the study of the language and ceremonies of the Navajos. Mr. Tozzer was with the Navajos from August 6 to November 20, when he returned to Cambridge. During this time he witnessed several ceremonies and, mixing freely with the Indians, met with considerable success in his study of the language.

The income of the Henry Warren Fund was devoted to an exploration of ancient ruins in New Mexico, where I left Mr. W. C. Farabee (A.M. 1900)—Hemenway Fellow and graduate student in this department—to carry on the work for two months. Mr. Farabee was thus able to examine a number of the ruined pueblos on the mesas and in the cañons, and to explore a small ruin with its adjacent burial place. For many courtesies and much assistance, while in New Mexico, we are greatly indebted to the Hyde Exploring Expedition, which is doing so much in a practical way for the welfare of the Navajo Indians. Mr. Farabee has been appointed Austin Teaching Fellow for the year 1901–02, and has taken part in the instruction in Course 1.

With the assistance of the income of the Huntington-Frothingham-Wolcott Fund for the past year, I was able to continue my researches in California in relation to the antiquity of man on the Pacific Coast. Visiting Calaveras and Toulumne counties, I examined several caves

and also a number of old mining shafts and tunnels, during a part of the time in company with Professor Merriam, of the University of California, who is familiar with the more recent geological formations of the state. Many important facts in relation to the auriferous gravels and later deposits were observed, and plans were formed for a thorough investigation in order to answer the question, When did man first appear in California? Mrs. Phoebe A. Hearst, at my suggestion, has generously provided the means for continuing this most important investigation for five years in connection with the work of the Department of Anthropology of the University of California. This Department was organized while I was in the state, and an advisory committee, of which I have the honor of being Chairman, was appointed by the Regents of the University. Before leaving the state I accepted an invitation from the University to give a brief address on the plan and objects of the new Department; and Miss Fletcher and Mrs. Nuttall, also of the advisory committee, gave lectures pertaining to their respective lines of research.

During my trip I was able to secure for the Museum a number of archaeological specimens and human bones from various places, for comparative study; also a small collection of baskets and other objects from the Indians living in Calaveras County, and from the Apache and Navajo tribes of Arizona and New Mexico.

Dr. Charles Peabody (Ph.D. 1893), a graduate student in the Department, kindly undertook on his own account to equip an expedition for archaeological exploration in Mississippi, in May and June last. Mr. Farabee accompanied Dr. Peabody on the expedition, and two large mounds were explored. Human skeletons, stone implements, pottery, and other objects were obtained, and Dr. Peabody is now making a study of the material preparatory to writing a report on the results of the expedition.

Dr. Roland B. Dixon (A.B. 1897), who was Assistant in Anthropology and is now Instructor in Anthropology, was absent from the Department during the past year. From August, 1900, to January, 1901, Dr. Dixon continued his studies of the languages of the Indians of the Northern Sierras in California, under the direction of Dr. Boas of the American Museum of Natural History. The months of February and May he spent in Berlin, studying the collections in the Museum für Völkerkunde, especially the Pacific Coast and Polynesian material. From May to September he was travelling in Northern Mongolia and in Siberia, south of Lake Baikal, on the Yenesei River, and in the Altai mountains. During this trip Dr. Dixon made an arrangement with several museums in Siberia for an *exchange of specimens* with our Museum.

Mr. H. M. Huxley (A.B. 1899) was a student in the Department in 1898-99. In January, 1900, he joined, as anthropologist, the Syrian Expedition under the charge of Mr. H. C. Butler, in order to study the Syrians and their origin. On the return of the other members of the expedition in June, 1900, Mr. Huxley continued his researches under the patronage of Mr. B. T. B. Hyde, remaining for a time at a small village in the Lebanon, where he learned the colloquial Arabic and collected a number of stories and songs in the vernacular. He afterward travelled through Central and Northern Syria. His final trip was from Beirût to Banyâs and the region east of the Jordan, where he studied the ruins, reaching Petra as his most southern point. Crossing the Ghôr south of the Dead Sea, he returned to Beirût through Western Palestine, and reached this country in July last. He has renewed his connection with the Department as a graduate student, and has been appointed Assistant in Anthropology and Hemenway Fellow for the year 1901-02. Mr. Huxley is now engaged in preparing a report on the physical characteristics of the native peoples as determined from the measurements, photographs, facial moulds and skulls secured on the expedition.

In March last, Dr. Frank Russell (A.B. 1896), Instructor in Anthropology, was obliged to depart suddenly for Arizona for the benefit of his health. He has since been appointed field assistant of the Bureau of American Ethnology, and I am thankful to state that the out-of-door life he is leading has proved most beneficial.

Instruction is now being given in the department by the Peabody Professor, and by Drs. Woods and Dixon, Instructors in Anthropology, Mr. Farabee, Austin Teaching Fellow, and Mr. Huxley, Assistant in Anthropology and Hemenway Fellow.

The library has been increased by the addition of 418 volumes and 130 pamphlets during the year, and now contains 5,249 volumes and pamphlets, including the current anthropological journals, and the publications of anthropological societies and museums from all parts of the world, secured by exchange for our own publications. The Museum of Comparative Zoölogy has recently transferred from its library to that of the Peabody Museum 215 volumes, pamphlets, and serials relating to anthropology, which, with the selected volumes recently received from the estates of Mrs. Mary Hemenway, Professor Josiah D. Whitney, and Librarian Justin Winsor, have added much to the importance of the library. Dr. Alexander Agassiz has also deposited in the library several valuable albums of native peoples of various countries. The Duke of Loubat has given us a copy of his reproduction of the Codex Fejervary-Mayer, the sixth ancient

Mexican Codex which he has reproduced and distributed. He has also sent us a copy of a reproduction of an old Mexican manuscript, "The Tonalamatl of the Aubin Collection," with introduction and explanatory text by Edouard Seler. This work was first published in German, and later we received the same in English. Thirty-eight other individuals have made gifts to the library.

The following friends have made gifts to the Museum during the year ending September last: Mr. Samuel Garman, Mr. E. A. Morley, Lieut. S. E. Woodworth, U.S.N., Mr. A. C. Vroman, Dr. Frank Russell, Mr. George W. Nash, Mr. Alfred M. Tozzer, Mrs. Asa Gray, Miss Abby L. Alger, Dr. W. McM. Woodworth, Mr. George B. Frazar, Mr. George U. S. Hovey, Mr. C. B. Moore (this gift contains specimens of a new type of pottery from Florida, which is figured and described in his latest memoir on the Archaeology of the Southern Atlantic States), Mr. W. M. MacVicar, Mrs. Zelia Nuttall, the heirs of Mr. Charles Beck, Dr. Roland Steiner, Dr. Alexander Agassiz, and also from the Museum of Comparative Zoölogy. We have also received the valuable gift from the American Exploration Society, through its President, Calvin Wells, Esq., and its Secretary, Mrs. Cornelius Stevenson, of a large Etruscan sarcophagus with the reclining figure of a woman and an inscription. This is one of eight sarcophagi from a tomb in the necropolis of the ancient city of Masarna, Viterbo, Italy.

By purchase we have added a small but important lot of stone images, carvings of faces in stone, beads and other objects collected in Mexico about fifty years ago.

The numerous objects that have been added during the year have all been catalogued by Mr. Willoughby, and, when possible, placed on exhibition. Mr. Willoughby has made many improvements in the arrangement of several collections, and he has prepared a number of maps and labels, such as we hope, in time, to have in all the cases. He has also made a card catalogue of all the negatives, and of the photographs, so that these valuable adjuncts to research can be readily consulted; and he is following the same method in arranging and recording all specimens not on exhibition. To care for the constantly increasing material in the present inadequate space of the Museum requires much patient labor, and in Mr. Willoughby I have an earnest and conscientious assistant.

In my last report a statement was made relating to the transfer of the Serpent Mound Park to the Ohio State Archaeological and Historical Society. It is gratifying to know that this Society has appointed a custodian, who has a house adjoining the park. We

have received notice that the monument to be erected near the Serpent Mound will bear the following inscription : —

THE SERPENT MOUND PARK

THE SERPENT MOUND WAS FIRST DESCRIBED BY SQUIER AND DAVIS IN
"ANCIENT MONUMENTS OF THE MISSISSIPPI VALLEY" 1843

SAVED FROM DESTRUCTION IN 1885 BY

FREDERIC WARD PUTNAM

PROFESSOR OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY
HARVARD UNIVERSITY

THE LAND INCLUDED IN THE PARK

WAS SECURED BY SUBSCRIPTIONS OBTAINED BY LADIES OF BOSTON
IN 1887 WHEN IT WAS DEEDED TO THE TRUSTEES OF

THE PEABODY MUSEUM OF HARVARD UNIVERSITY CAMBRIDGE
MASSACHUSETTS

EXEMPTED FROM TAXATION BY ACT OF LEGISLATURE
OF OHIO IN 1888

TRANSFERRED BY HARVARD UNIVERSITY MAY 1900 TO THE
OHIO STATE ARCHAEOLOGICAL AND HISTORICAL SOCIETY

FOR PERPETUAL CARE

AS A

FREE PUBLIC PARK

The bequest of \$10,000 from the late Roger Wolcott, to be added to the Huntington-Frothingham-Wolcott Fund which he established in 1891 in memory of his brother, is another instance of the interest he always took in the Museum.

In previous reports I have referred to the invaluable collections contained in the Museum, and to the over-crowding of all its halls and work-rooms. While this condition is the best evidence of the successful growth of the Museum, it makes it all the more imperative that the remainder of the building should be erected as soon as possible. An estimate made for the completion of the building, which would double its present size, is \$150,000. In addition to this sum, the permanent funds of the Museum should be increased by an equal amount in order to provide for salaries and for the current expenses.

With the increasing interest in archaeological and ethnological research, in all parts of the country, it seems hardly possible that this, the first museum to be founded in this country purely for anthropology, and one that has taken such an important part in the development and encouragement of anthropological research, should be allowed to fall behind.

F. W. PUTNAM,

Peabody Professor and Curator of the Museum.

THE SEMITIC MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — The matter of chief interest during the past year has been the erection of the Semitic Building. The hope that the Building might be completed during the summer of 1901 has not been realized. This is due to certain unavoidable delays, especially to the difficulty at times in getting building materials promptly. It now seems probable that the work may be completed by the middle of the current academic year, so that the Semitic Library and the instruction may then be moved into the new quarters. The collections of the Museum, however, owing to the absence of the Curator, will have to remain where they are until the summer of 1902. This delay is a matter for regret, but it has one distinct advantage: the objects bought for the Museum during the current year can be more easily incorporated with the existing collections at the time of removal than could be done later. This enlarged exhibit will also be more attractive and instructive.

Until June, 1901, no provision had been made for supplying the new Building with cabinets, furniture, library conveniences, etc. In that month Mr. Jacob H. Schiff, founder of the Museum and donor of the Building, generously gave \$10,000 toward the object named, thus again manifesting his wise interest in this important undertaking.

During the past year four glass vases from Syria have been added to the collections by purchase. The other additions have been by gift.

From Mr. Max Benshimol and other members of his family we have received a fine large brass platter, adorned with Biblical scenes and a Hebrew inscription.

The Egypt Exploration Fund of London sent us nineteen fragments from Egypt of papyri with Greek inscriptions. These date from the early centuries of the Christian era. One contains the first seven verses of Paul's Letter to the Romans. Two are extracts from Greek poets (Homer, Alcman). The others are of a commercial character, relating to contracts, etc.

To the generosity of Mr. Theodore M. Davis, of Newport, we owe the gift of a handsome mummy-case from Egypt.

These valuable and interesting gifts from Mr. Davis and the Exploration Fund raise the question whether the time has not come for the Semitic Museum to undertake Egyptian exploration on its own account. There are several obvious reasons why this should be done.

1. The intimate relations of Egypt with the Semitic world, extending over a period of many centuries.
2. The certainty that a well planned and vigorous expedition, covering a period of several years, will bring to light many of the treasures still lying beneath the soil of Egypt.
3. The generous attitude of the Egyptian government in granting permission to dig, and in allowing the explorer to own a large part of what he may find.
4. The great activity now displayed in this work by European governments and learned societies, and by at least two of the American Universities.
5. The fact that the chances for success in this field, owing to the great present activity, are decreasing with each passing year.

What can be done in this field is well illustrated by the excellent work carried on for the past two years for the University of California by two Harvard graduates (Messrs. Reisner and Lythgoe). The manuscripts, pottery, personal ornaments, and other objects unearthed by this expedition are sufficient to form a considerable museum.

Nor does Egyptian exploration appeal by any means exclusively to students of Egyptian and Semitic antiquity. It is of very great interest to Classical scholars, as is evident from the thousands of Greek papyri now owned in Oxford, in Berlin, and by the University of California.

What we need in order to begin the work for Harvard is a sum of at least \$10,000 a year for not less than five years. With this amount we could not fail to enrich our Museum with important additions, and we should at the same time certainly make valuable contributions to knowledge. The cost of the work for the University of California is borne by one public-spirited woman. Would that some friend, or friends, might be moved to do a similar service for Harvard!

There are still other fields, more strictly Semitic, which invite exploration. These lie mostly within the borders of the Turkish Empire. Here the conditions imposed by the government are not so favorable as in Egypt. The Turkish law, like the Greek, forbids the

exploration of antiquities, claiming all for the Imperial Museum at Constantinople; but that this law is generously administered may be seen from the large numbers of important objects at the British Museum, the Louvre, the Berlin Museum, and the University of Pennsylvania.

One of the Turkish fields is Babylonia-Assyria. Hence have come the most impressive of all Semitic discoveries. Here European museums have long been at work. The successes of the University of Pennsylvania during the past decade are a matter of common knowledge. A Babylonian expedition led by a Harvard graduate has recently been organized in the interest of the Smithsonian Institution.

That Harvard should also enter this field has long been the earnest wish of the Semitic Department. Many of the most instructive objects in our Museum are plaster casts from Assyrian monuments in the Museums of Europe. But such casts can now rarely be had, except in cases where moulds already exist, the curators of the museums having learned by experience that the originals are damaged by the process of making moulds. Any considerable addition to the Babylonian-Assyrian section of our Museum must, therefore, come from independent exploration.

But there is yet another Semitic field which invites us more strongly than any other. This is Syria, and more particularly, Palestine. Here lived the most influential of all the Semitic peoples, and here was written the most important of all books. Here, too, strange to say, but a small amount of exploration has been done, so little, indeed, that no one can prophesy what the results of thorough excavation might be. One thing, however, can be said with certainty: the land of Palestine is so important in the history of the world that even small results in the number of objects found would repay large expenditure of time and money. In view of the numerous attractive sites which invite the spade, it seems astonishing that so little excavation has been undertaken in Palestine.

We by no means overlook or disparage the work of the Palestine Exploration Fund. It has made very great contributions to our knowledge of the geography of the land, and has conducted successful excavations; but, chiefly from lack of money, these last have been on an inadequate scale. Nor do we forget the recent establishment in Palestine of an American School of Archaeology. This undertaking, set on foot mainly through the labors of Professor J. Henry Thayer, of Harvard, is full of hope. But it is not

probable that this School will be able to undertake digging on a large scale for a long time to come, and even if this could be done, the interests of the School and those of a Harvard expedition would in no wise conflict. There is room for many exploring parties.

In the lands bordering on Palestine remarkable discoveries have been made, chiefly of the Graeco-Roman period. Important objects of the same nature undoubtedly lie beneath the soil of Palestine proper, and these are of great value. Excavation will also tell us much of the history of the country before it became the home of the Hebrews. But the objects most worthy of search are the remains coming from the Hebrew occupation of the land. That Harvard should take part in this comparatively new research is greatly to be wished. While she is sending out her sons to do such good service for other institutions, shall she not enrich her own stores and increase her lustre by sending others of her sons on similar missions of discovery?

What we need to this end is money enough to plan a campaign covering several years. In this campaign we should hope for a good reward in the number and character of the objects found. But even if we should find little, it would be no small satisfaction to have made a well-considered, continued effort to unearth the memorials of a people so important in the history of the human race. The results of this work will be of deep interest to multitudes. From the nature of the case, we must look to the few for the means. When the Semitic Museum is adequately endowed, it will be equipped for such undertakings. Till then we must rely on the generous coöperation of the friends of learning.

D. G. LYON, *Curator*.

ROME, November 16, 1901.

THE FOGG ART MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I have the honor to present the following report on the Fogg Art Museum for the year 1900–01.

We have received from members of the Class of 1895 the important gift of a marble statue, which is an original work of later Greek sculpture of high character. It appears to be an Aphrodite, and closely resembles the so-called Venus of Milo, though it is on a smaller scale. The pose of the figure is almost exactly the same, and the likeness extends to the disposition of the drapery, which, however, is cast in the opposite direction. The head, right arm, left forearm including the elbow, and the feet are wanting; but in other respects the figure is for the most part in remarkably good condition. The modelling of the body is extremely refined and beautiful, and the surfaces, save in a few small spots, are practically uninjured.

Our generous benefactor, Mr. Edward W. Forbes, '95, has added to the valuable collection of original works deposited by him as an indefinite loan, a large panel triptych in tempera of the Italian school of the fifteenth century, representing the Madonna and Child surrounded by angels and cherubs, with a St. Sebastian on one wing and a St. Francis on the other; and a small Holy Family of the sixteenth century in oil color, which has the characteristics of the works of Correggio. The triptych is in good condition, save for the rubbing off of the thinner carnations in some places, an injury which many Italian tempera paintings have suffered from the repeated cleanings by unskilful hands to which they have been subjected. But the work has suffered little from the more serious damage of attempts at restoration by repainting. The smaller work is entirely free from injury of any kind, except a slight cracking of the *gesso* ground due to contraction and expansion of the panel.

We have also received as a gift from Mr. Charles Fairfax Murray of London, an Ionian Greek vase of the seventh century B.C.; from Professor C. E. Norton, a drawing after Michael Angelo by Brenourry, and from Mr. Edward Robinson, a print showing a conjectural restoration of the pediment sculptures of the temple of Zeus at Olympia.

The Department of Fine Arts has acquired, and deposited in the Museum, a lead-pencil and wash drawing of Chamouni by John Ruskin, — a work of the "Modern Painters" epoch, which was his strongest time as a draughtsman.

We have acquired by purchase seventeen electrotpe reproductions of objects of Mycenaean art, and two electrotypes of the well known Vaphio cups.

But few additions have been made during the year to the collections of prints and photographs. The accessions to the Gray Collection comprise the following prints: Of the so-called Baldini-Botticelli plates, the Dante attacked by Wild Beasts, from the series of illustrations to the *Divina Commedia*, published in Florence in the year 1481 (this print is the most rare one of the series, and is of great value as an example of the primitive line-engraving of Italy); four etchings of the Port of Leghorn, by Stefano della Bella, a Florentine engraver of the seventeenth century; a portrait of Pieter Forestus by Goltzius; Pope Aeneas Sylvius Piccolomini, a wood-cut by Michael Wolgemut; and two prints of Turner's *Liber Studiorum*: the *Via Mala* in the etched state, a rare print, and the *Stork and Aqueduct* (one of the unpublished plates of the series), an impression from the re-mezzotinted plate. To the Randall Collection but one addition has been made, namely, a chromolithograph of a scene from *Pilgrim's Progress*, published by Goupil & Co., a gift from Mr. Howard Payson Arnold.

Eight hundred and fifty-eight photographs have been purchased during the year, comprising representations of Greek sculpture, Roman architecture, Roman statues and portrait busts, Egyptian sculpture, Indian sculpture, French painting, Flemish painting, architecture of the Netherlands (Mediaeval, Renaissance, and Modern), sculpture of the Netherlands, French architecture and sculpture (Mediaeval, Renaissance, and Modern), Mediaeval architecture of Spain, architecture and sculpture of the Italian Renaissance, Scandinavian sculpture, and modern English architecture, including the churches of Sir Christopher Wren.

To the collection of slides 266 additions have been made.

To the library of the print collections we have added the work in four volumes by Charles Le Blanc entitled "*Manuel de l'amateur d'estamps*"; and to our small Museum collection of books have been added the following works: "*I freschi delle loggie Vaticane*" after Raphael, given by Mrs. G. W. Wales; Ruskin's "*Notes on his Drawings by Turner*," and Schnaase's "*Geschichte d. bildenden Kunst im Mittelalter*" (Vols. 2 and 3), given by Professor C. E.

Norton, and Ameling's "Führer durch d. Antiken in Florenz," acquired by purchase. The cataloguing of photographs and slides has kept pace with accessions, and the following subject lists have been made: Greek and Roman sculpture by galleries, Old Testament subjects in painting, and a list of gardens. Separate numbers have been given to all photographs in the ancient and modern groups, 1,437 photographs of the collection belonging to the Fine Arts Department have been accessioned and separately numbered, and to our list of photographs classified by painters dates have been added.

Our annual summer examination of the cases found every photograph in its place, or accounted for.

Photographs of the original works of art in the Museum are now kept on sale. The sales of these have thus far not been large, but they will doubtless increase when the fact that they are obtainable becomes better known.

As our facilities for mounting and remounting prints and photographs have to be maintained, though our accessions are now insufficient to keep our workshop fully employed, we have undertaken to do such work for the Department of Architecture, the Library, and other departments of the University.

The number of photographs mounted for the Museum during the year was 1,102.

The number of visits for access to photographs in the cases was 1,462. Of these 1,148 were by members of the University.

The number of visits to the Print Department for the examination of prints not displayed on the walls was 169. Of these 98 were by men, 71 by women, and 83 by members of Harvard University.

The work of cataloguing the Randall Collection is necessarily slow, as the prints have in all cases to be carefully examined and their states determined, — which involves much consultation of authorities and comparison with prints in the Gray Collection. As the catalogue of this collection by engravers progresses, a temporary card catalogue by designers and a temporary subject list are carried on.

The number of prints mounted during the year was 1,284.

Members of the University hardly as yet realize what an opportunity is afforded by our superb print collections. The Gray and Randall collections together afford materials for the thorough study of engraving from its earliest beginnings and in all of its varieties. These collections include a considerable number of rare and costly prints such as are, in many cases, to be seen elsewhere only in the largest public collections of Europe. Since the introduction of

photography as a means of illustrating works of art, the general interest in engraving as a means of reproduction has naturally declined. But the finest engraving is not of the reproductive kind. Engraving has been extensively practiced, as an original means of expression, by some of the greatest masters of design. Our collections are rich in the original works of such masters. But even modern reproductive engraving has often, in its best phases, qualities that give it a high independent value; and thus, from whatever point of view it may be regarded, the importance of engraving as a mode of artistic expression must always be great.

Our more important new accessions are not only original works of great schools of art, but most of them are really fine examples. Such excellent pieces of early Italian painting as the Siennese *Madonna*, the Foligno triptych, and the small Florentine *Tabernacolo*, have hardly before been brought into the country. These works, together with our unique *Meleager*, the *Aphrodite* statue, and the choicer treasures of the print collections, give our Museum a high character already. But these acquisitions make us feel increasingly the need of such alterations in the building, or additions to it, as may afford a suitable light for their display. It is entirely correct to say that our paintings cannot now be seen at all in any proper sense. Their use to us, therefore, for purposes of instruction, is greatly diminished. In my last report I suggested that the form of the roof might be changed so as to give us the needed light. But the space on our upper floor is very limited, and will not exceed that which will be needed for prints and photographs. I would therefore now suggest that the upper floor be kept as it is, and used for the storage of prints and photographs exclusively, while a suitable gallery, contiguous to the present building, and connected with it by a short passageway, be constructed. Such a gallery might be placed on the east side, toward the new Architectural building, and have an eastern entrance which would give the Department of Architecture more convenient access to our collections, for which it has felt the need. Such an addition might easily be made to harmonize with our own building and with that of the Architectural Department. The cost of it need not be large, and it would greatly enhance the working value of our growing collection of paintings.

The need of larger resources is great. Our Museum is already performing an important function in the University, and if a healthy growth is to be maintained, which shall enable us to meet the needs of an increasing number of students, more ample endowments are imperative. We need more money, not only to build up a working

collection of original works of past schools, the difficulty and cost of obtaining which increases from year to year, but also to fill the gaps in our collection of photographs. There can be no limit to the desirable growth of this collection of authentic documents illustrating the history of the Fine Arts in all ages, to which we have lately been able to make but few additions. The greater part of our present income from all sources still has to be devoted to the cost of administration, and to the care, and the heating and lighting of the building.

CHARLES H. MOORE, *Director.*

MINERALOGICAL MUSEUM AND LABORATORIES OF MINERALOGY AND PETROGRAPHY.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—The courses of study in the Department of Mineralogy and Petrography had an increased attendance during the year 1900-01, amounting in all to one hundred students, and including two candidates for the degree of Ph.D. Mr. Ernest Howe received this degree in June, presenting as his thesis: The pre-Cambrian intrusive rocks of the Animas Cañon, Colorado.

Dr. Eakle was appointed Instructor in Mineralogy at the University of California, and Dr. Edwin C. E. Lord became Austin Teaching Fellow for the year. During the summer Dr. Palache was engaged in field-work in Arizona, and the Curator in Vermont. Mr. Prindle, a candidate for the degree of Ph.D., successfully explored and mapped for his thesis, *without a companion*, the La Sal mountain range in Utah. The Curator has edited the department of American Petrography for the new *Geologisches Centralblatt*.

The following papers were published:—

Notes on Tellurides from Colorado (Sylvanite from Cripple Creek; Crystallographic identity of Goldschmidite and Sylvanite; Hessite crystals from Colorado), by CHARLES PALACHE. *Am. Journ. Sci.*, Vol. X, pp. 419-427. (Also in German in the *Zeit. für Krystallographie*.)

Geology and Petrography of Monhegan Island, Maine, by E. C. E. LORD. *Am. Geol.*, Vol. XXVI, pp. 329-347.

The collections of minerals and rocks remained nearly stationary, owing to a lack of funds for purchase and to the small number of gifts received. Mr. W. A. Bentley, of Nashville, Vt., added about 100 new microphotographs of snow crystals to the large collection made by him and now exhibited on the walls of the Museum. Dr. Palache has installed, in glass cases in the lecture-room, a lecture collection of minerals, which has been made up from duplicates and new acquisitions, and which provides better material for illustrative purposes than can ordinarily be placed in students' hands.

JOHN E. WOLFF, *Curator*.

RADCLIFFE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I have the honor to present my report on the condition of Radcliffe College during the academic year 1900–01.

The number of students in actual attendance during the year was 457, as against 407 during the preceding year.

Graduate Students	54
Seniors	62
Juniors	57
Sophomores	81
Freshmen	71
Special Students	132
Total	457

At the Commencement in June, 1901, seventy-four students, five of whom had not been in residence during 1900–01, received the degree of A.B. Eleven students, who had not been registered as Seniors, received the degree, and four, who had been so registered, failed to receive it. One of the four was prevented by illness from completing her work. Of the seventy-four successful candidates, two received the degree *summa cum laude*; twenty-four received it *magna cum laude*; twenty-five *cum laude*.

Fourteen students received the degree of Master of Arts. Four of the fourteen had taken their first degree at Radcliffe; the others represented the following colleges: Colby College, University of Michigan, Smith College, Vassar College, Wellesley College, College for Women of Western Reserve University.

Examinations for admission were held in June, 1901, in Cambridge and New York; in Buffalo, Cincinnati, Denver, Louisville, Portland (Me.), Quincy, South Byfield, Springfield, Washington (Conn.), Worcester, and Youngstown (O.). They were also held in September in Cambridge. Three hundred and twenty-one candidates presented themselves for examination. Fourteen were candidates for admission as special students; fifty-six candidates took part of the examination or worked off admission conditions; three candidates were examined for advanced standing; one hundred and twenty-six candidates took the Preliminary Examinations, and one hundred and twenty-one the

Final Examinations. One Postponing candidate was rejected. The results of the Final Examinations are given in the following table:—

	Admitted.	Admitted "Clear."	Rejected.
June	105	64	3
September	11	1	2
Total	116	65	5
Total rejected	5		
	121		

One hundred and sixteen candidates were admitted as Freshmen in 1901, as against ninety-three in 1900.

Sixty-one Graduate Students registered during the year, forty-seven of whom were from other colleges. Five of the forty-seven entered the Senior Class, and four of the five received the degree of Bachelor of Arts. Two entered the Junior Class, one of whom received the degree of Bachelor of Arts. Twenty-two students were admitted to nine full courses, and twenty-nine students to eighteen half-courses of the "Courses primarily for Graduates in Harvard University open to competent students of Radcliffe College."

Sanskrit was taken	by four students.
Classical Philology was taken	by four students.
German was taken	by eight students.
Germanic Philology was taken	by six students.
History was taken	by one student.
Government was taken	by one student.
Philosophy was taken	by one student.
Education and Teaching was taken	by nineteen students.
Mathematics was taken	by four students.
Geology was taken	by two students.
Archaeology was taken	by one student.

The number of courses offered in 1900-01 was 192½; they were offered by 114 professors and instructors in Harvard University.

The members of the Academic Board for 1900-01 were: Professors Byerly (*Chairman*), Warren, Mark, Wright, Macvane, Hall, von Jagemann, Grandgent, and Kittredge, and the President and the Dean of Radcliffe College.

At the Associates' Meeting in February, 1901, Mr. John Farwell Moors, of Boston, was elected a member of the Council of Radcliffe College, to fill the unexpired term of Mr. J. B. Warner.

The Sargent Prize, offered for the best metrical translation of an ode of Horace, and open to competition by the students of Harvard and of Radcliffe College, was this year awarded to Norma Rose Waterbury, a Radcliffe Freshman.

The Caroline I. Wilby Prize was not awarded.

The great interest of the year has been the building of Bertram Hall, the dormitory given to Radcliffe by Mrs. David P. Kimball, and named by the College, with her consent, after her own family. The hall is situated on Shepard Street, on the property purchased by Radcliffe from W. Q. Phillips, as described in the Report for 1899-1900. It is a red brick building, four stories high, in the Colonial style of architecture of the "Salem type," chosen as well suited to the needs of a college hall of residence and as best representing the architectural and historical traditions of this part of New England. The ideas of the architect, Mr. A. W. Longfellow, Jr., and of the Chairman of the Committee, Mrs. Henry Whitman, have been thoroughly carried out, and the result is one of the most beautiful buildings in Cambridge, not surpassed in harmony of proportion and charm of effect by any of the College dormitories. It looks the model of a college hall of residence, and that expression, hall of residence, is used to emphasize the intention of the founder, to provide a home for twenty-five young women, who may there lead a natural, simple, healthy, and happy life, and in so doing, set a standard for the social life of women in our own college as well as in others. A college-life for young women is still an experiment, with no tradition and little experience to go by; but it seems certain that, to be a healthful life, it should be free from the artificial restraints of a convent or a boarding school, and, if it is a life natural to young women, it will be essentially different from the college-life of young men. The life in Bertram Hall will be led under the best conditions, in a delightful and beautiful home, in the atmosphere and under the many advantages of Cambridge, and there is every reason to hope that the young women, who there come together for the honorable purpose of study, will develop a type of college-life far higher than has yet been reached — a community-life adapted to their own needs, to their real interests, to their true growth and development, and to the part which they ought to take in the work of the world. For this inestimable gift to Radcliffe, with all that it means to the College and to the students, the College cannot adequately thank Mrs. Kimball, nor, above all, for the splendid generosity which, to the original promise of \$50,000, has added the large sum of \$20,000, in order that the plan might be carried out in the best possible manner.

The gifts and legacies of the year have been as follows: —

\$2,250 from the heirs of Edward Austin.

\$2,000 by the will of Barthold Schlesinger, of Brookline.

\$1,000 from a giver who withholds his name.

We were agreeably surprised to learn, in the summer of 1901, that Radcliffe College is ultimately to inherit the entire estate of Miss Susan Cabot Richardson, who died in June, 1901, and whose will was admitted to probate July 25th. The estate is valued at nearly \$200,000, and the income is at present enjoyed by two friends of Miss Richardson during their unmarried lives.

The College has also to count on a legacy of \$20,000 by the bequest of Susan W. Dabney, and these promises for the future are singularly encouraging at a time when the present is somewhat dark. The purchase of land brought about the diminution of income, and, with a diminished income, we are feeling the pinch of poverty. In the opinion of the Finance Committee, Radcliffe College should endeavor to add to its endowment an unrestricted fund of half a million dollars (\$500,000).

AGNES IRWIN, *Dean*.

APPENDIX.

RESIGNATIONS.

- WILLIAM JAMES ASHLEY, Professor of Economic History, to take effect September 1, 1901.
- ROGER TROWBRIDGE ATKINSON, Instructor in Histology and Embryology. September 24, 1901.
- CHARLES BEARDSLEY, Proctor, to take effect September 1, 1901.
- HAROLD BISBEE, Assistant in Chemistry, to take effect September 1, 1901.
- WILLIAM ALLEN BROOKS, Jr., Demonstrator of Anatomy, to take effect September 1, 1901.
- HARRISON HITCHCOCK BROWN, Instructor in Mathematics. September 24, 1901.
- WILLIAM GARROTT BROWN, Deputy Keeper of University Records, to take effect June 1, 1901. May 27, 1901.
- FREDERICK EDWARD CHENEY, Assistant in Ophthalmology. June 25, 1901.
- THATCHER CLARK, Assistant in French, to take effect September 1, 1901.
- ROBERT WHEATON COUES, Assistant Recorder. September 24, 1901.
- REGINALD ALDWORTH DALY, Instructor in Geology. June 25, 1901.
- EDWIN WELLES DWIGHT, Assistant in Clinical and Operative Surgery, to take effect September 1, 1901.
- WILLIAM PAINE EVERTS, Proctor, to take effect September 1, 1901.
- ALFRED LAWRENCE FISH, Assistant in Political Economy. September 24, 1901.
- LANGDON FROTHINGHAM, Instructor in Comparative Pathology and Bacteriology, to take effect September 1, 1901.
- APTHORP GOULD FULLER, Assistant in Philosophy, to take effect February 11, 1901. January 28, 1901.
- EDWARD DWIGHT FULLERTON, Assistant in Government, and Proctor, to take effect September 1, 1901.
- ALFRED COPE GARRETT, Instructor in English. October 9, 1900.
- WILLIAM WATSON GOODWIN, Eliot Professor of Greek Literature. April 8, 1901.
- JAMES BRADSTREET GREENOUGH, Professor of Latin, to take effect at the end of the academic year. April 29, 1901.
- THOMAS HARVEY HAINES, Proctor, to take effect September 1, 1901.
- ASAPH HALL, Lecturer on Celestial Mechanics, to take effect September 1, 1901.
- ALBERT BUSHNELL HART, Member of the Board of Examination Proctors. June 25, 1901.
- LAWRENCE JOSEPH HENDERSON, Assistant in Chemistry. October 29, 1900.
- JOHN PERHAM HYLAN, Proctor, to take effect September 1, 1901.
- RICHARD FAY JACKSON, Assistant in Chemistry, to take effect September 1, 1901.
- HOMER HUNTINGTON KIDDER, Instructor in English. September 24, 1901.
- WALDEMAR KOCH, Assistant in Physiology. September 24, 1901.

- WALTER BRACKETT LANCASTER, Assistant in Ophthalmology, to take effect September 1, 1901.
- CHRISTOPHER COLUMBUS LANGDELL, Dane Professor of Law. October 9, 1900.
- GAILLARD THOMAS LAPSLEY, Instructor in History. January 28, 1901.
- SIDNEY ARCHER LORD, Assistant in Neurology, to take effect September 1, 1901.
- CHARLES PARKER LYMAN, Professor of Veterinary Medicine, to take effect September 1, 1901.
- ROBERT MACDOUGALL, Instructor in Philosophy, to take effect September 1, 1901.
- ALFRED BULL NICHOLS, Instructor in German, to take effect September 1, 1901.
- JAY BERGEN OGDEN, Instructor in Clinical Chemistry. September 24, 1901.
- FREDERICK HUNTINGTON OSGOOD, Professor of Veterinary Surgery, to take effect September 1, 1901.
- EDWIN WILLIAM PAHLOW, Assistant in History, to take effect September 1, 1901.
- WILLIAM HUNTINGTON PARKER, Assistant in Physiology, to take effect March 1, 1901. April 29, 1901.
- HIRAM STODDARD RALEY, Assistant in Chemistry, to take effect September 1, 1901.
- FREDERICK WILLIAM REYNOLDS, Austin Teaching Fellow in English, to take effect September 1, 1901.
- FRANK RUSSELL, Instructor in Anthropology. April 29, 1901.
- HENRY LATIMER SEAVER, Instructor in English. May 27, 1901.
- JOSEPH HENRY THAYER, Bussey Professor of New Testament Criticism and Interpretation, to take effect at the end of the academic year. January 28, 1901.
- JOSEPH TORREY, Jr., Instructor in Chemistry, to take effect September 1, 1901.
- CHARLES MARSHALL UNDERWOOD, Jr., Austin Teaching Fellow in Romance Languages and Literatures, to take effect September 1, 1901.
- JOSEPH PARKER WARREN, Assistant in Government, to take effect February 11, 1901. January 28, 1901.
- JOSEPH DEUTSCH WEIS, Assistant in Bacteriology, to take effect September 1, 1901.
- WILLIAM FRANKLIN WILLOUGHBY, Instructor in Economics, to take effect September 1, 1901.
- KENELM WINSLOW, Assistant Professor of Veterinary Therapeutics. September 24, 1901.

APPOINTMENTS.

FACULTY OF ARTS AND SCIENCES.

[*Without limit of time, or for more than one year.*]

- COMFORT AVERY ADAMS, Jr., Assistant Professor of Electrical Engineering for five years from September 1, 1901. May 27, 1901.
- ABRAM PIATT ANDREW, Instructor in Economics. September 24, 1901.
- LEWIS EDWARDS GATES, Assistant Professor of Comparative Literature for five years from September 1, 1901. June 10, 1901.
- WILLIAM WATSON GOODWIN, Eliot Professor of Greek Literature, Emeritus. April 8, 1901.

- ARLES GROSS, Professor of History. June 10, 1901.
- UL HENRY HANUS, Professor of the History and Art of Teaching. May 27, 1901.
- LLIAM FENWICK HARRIS, Instructor in Greek from September 1, 1901. March 25, 1901.
- BERT ANDREW HOWARD, Professor of Latin. May 27, 1901.
- RON SATTERLEE HURLBUT, Assistant Professor of English for five years from September 1, 1901. June 25, 1901.
- WIS JEROME JOHNSON, Assistant Professor of Civil Engineering for five years from September 1, 1901. May 27, 1901.
- MES LEE LOVE, Assistant Professor of Mathematics for five years from September 1, 1901. May 13, 1901.
- WARD LAURENS MARK, Director of the Zoölogical Laboratory. November 19, 1900.
- GO RICHARD MEYER, Instructor in Economics. September 24, 1901.
- WARD KENNARD RAND, Instructor in Latin from September 1, 1901. February 25, 1901.
- BERT SAUVEUR, Assistant Professor of Metallurgy and Metallography for five years from September 1, 1901. May 13, 1901.
- EMENT LAWRENCE SMITH, Pope Professor of Latin. June 10, 1901.
- RBERT WEIR SMYTH, Professor of Greek from September 1, 1901. February 25, 1901.
- IVER MITCHELL WENTWORTH SPRAGUE, Instructor in Economics. September 24, 1901.
- ANK WILLIAM TAUSSIG, Henry Lee Professor of Economics. June 25, 1901.
- LAND THAXTER, Professor of Cryptogamic Botany. September 24, 1901.
- EN ALBRECHT WALZ, Instructor in German. June 3, 1901.
- RATIO STEVENS WHITE, Professor of German, to serve from September 1, 1902. September 24, 1901.
- MES KELSEY WHITTEMORE, Instructor in Mathematics from September 1, 1901. April 29, 1901.
- O WIENER, Assistant Professor of Slavic Languages and Literatures for five years from September 1, 1901. May 13, 1901.
- R BACKUS WOODWORTH, Assistant Professor of Geology for five years from September 1, 1901. April 29, 1901.

[For 1900-01.]

- ENEZER HENRY ARCHIBALD, Assistant in Chemistry. November 5, 1900.
- WTON SAMUEL BACON, Assistant in Hygiene. October 9, 1900.
- ARLES BEARDSLEY, Austin Teaching Fellow in Political Economy. November 5, 1900.
- IGHT ST. JOHN BOBB, Assistant in History. October 9, 1900.
- YNAL CAWTHORNE BOLLING, Assistant in English. October 9, 1900.
- MBRY COOK BOYNTON, Austin Teaching Fellow in Geology. November 5, 1900.
- ERISON HITCHCOCK BROWN, Instructor in Mathematics. October 29, 1900.
- ARLES THEODORE BURNETT, Assistant in Philosophy. November 12, 1900.
- BRY LIONEL BURNHAM, Assistant in Government. October 9, 1900.
- RONIO ALFREDO CAPOTOSTO, Assistant in Italian. October 29, 1900.
- ELBOROUGH CHURCHILL, Assistant in English. October 9, 1900.

- FLETCHER BARKER COFFIN, Assistant in Chemistry. October 9, 1900.
 NELSON ROWBERRY DAVIS, Assistant in Chemistry. October 9, 1900.
 LUDWIG JOSEPH DEMETER, Instructor in German. October 9, 1900.
 ALFRED LEWIS PINNEO DENNIS, Assistant in History. October 9, 1900.
 EDWARD ADDISON DUNLAP, Assistant in Chemistry. October 9, 1900.
 MERRITT LYNDON FERNALD, Assistant in the Herbarium. October 29, 1900.
 ALFRED LAWRENCE FISH, Assistant in Political Economy. October 9, 1900.
 AUGUSTUS HENRY FISKE, Assistant in Chemistry. October 9, 1900.
 BURTON PERCIVAL FLEMING, Instructor in Surveying (second half-year). February 11, 1901.
 GEORGE SHANNON FORBES, Assistant in Chemistry. October 9, 1900.
 APTHORP GOULD FULLER, Assistant in Philosophy. October 9, 1900.
 PHILIP JACOB GENTNER, Assistant in English. October 9, 1900.
 RALPH WALDO GIFFORD, Assistant in French. October 9, 1900.
 RICHARD HARWOOD HUSON HART, Assistant in English. October 9, 1900.
 GEORGE WILLIAM HEIMROD, Austin Teaching Fellow in Chemistry. November 5, 1900.
 ARTHUR STEDMAN HILLS, Assistant in Elocution. October 29, 1900.
 HENRY BARRETT HUNTINGTON, Instructor in English for the second half-year. November 19, 1900.
 JOHN PERHAM HYLAN, Assistant in Philosophy. October 9, 1900.
 STEN KONOW, Assistant in Sanskrit from December 1 to the end of the academic year. November 12, 1900.
 EDWIN CHESLEY ESTES LORD, Austin Teaching Fellow in Mineralogy and Petrography. November 5, 1900.
 GEORGE RICHARD LYMAN, Austin Teaching Fellow in Botany. November 5, 1900.
 DUNLAP JAMISON McADAM, Assistant in Chemistry. October 29, 1900.
 MAURICE LAWRENCE MCCARTHY, Assistant in Chemistry. October 9, 1900.
 THOMAS CALVIN MCKAY, Austin Teaching Fellow in Physics. November 5, 1900.
 JOHN ALBERT MACY, Assistant in English. October 9, 1900.
 ELWOOD MEAD, Lecturer on Irrigation. February 11, 1901.
 JAMES FRANKLIN MESSENGER, Assistant in Philosophy. October 9, 1900.
 LANDON CLARENCE MOORE, Assistant in Chemistry. November 5, 1900.
 SYLVANUS GRISWOLD MORLEY, Instructor in French and Spanish. October 29, 1900. Austin Teaching Fellow in French and Spanish. November 5, 1900.
 HORACE HENRY MORSE, Assistant in History. November 5, 1900.
 JAMES AMBROSE MOYER, Austin Teaching Fellow in Mechanics. November 5, 1900.
 DANIEL JAMES MURPHY, Assistant in History. October 9, 1900.
 FREDERICK AMIL NELSON, Assistant in Mechanical Drawing. October 29, 1900.
 GUY NEWHALL, Assistant in Government. October 9, 1900.
 RAYMOND TASKER PARKE, Assistant in History. October 9, 1900.
 JAMES HORACE PATTEN, Austin Teaching Fellow in Political Economy. November 5, 1900.
 WILLIAM HOWELL REED, Instructor in German. October 9, 1900.
 FREDERICK WILLIAM REYNOLDS, Assistant in English. October 29, 1900.
 ALBIN LEAL RICHARDS, Assistant in Government. October 9, 1900.
 CHARLES HENRY RIEBER, Assistant in Philosophy. October 9, 1900.
 GUIDO CARL LEO RIEMER, Austin Teaching Fellow in German. November 5, 1900.

- JAY EMERY ROOT, Assistant in Chemistry. November 5, 1900.
 HENRY LATIMER SEAVER, Assistant in English. October 9, 1900.
 ARTHUR BLISS SEYMOUR, Assistant in the Cryptogamic Herbarium. October 9, 1900.
 WILMON HENRY SHELDON, Austin Teaching Fellow in Philosophy. October 9, 1900.
 MACY MILLMORE SKINNER, Austin Teaching Fellow in German. November 5, 1900.
 CHARLES HENRY STEPHENS, Assistant in Government (second half-year). February 11, 1901.
 EMIL HERMAN STONE, Assistant in Chemistry for remainder of the current year. January 7, 1901.
 RALPH WALTER STONE, Assistant in Geology. November 19, 1900.
 CHARLES MARSHALL UNDERWOOD, Jr., Austin Teaching Fellow in French and other Romance Languages. November 5, 1900.
 JOSEPH PARKER WARREN, Assistant in Government. October 9, 1900.
 FRANK DEWITT WASHBURN, Assistant in the Architectural Library for the remainder of the academic year. February 25, 1901.
 FREDERICK MASON WILDER, Assistant in Meteorology (second half-year). February 11, 1901.
 HENRY AARON YEOMANS, Austin Teaching Fellow in History and Government. November 5, 1900.
 ROBERT MEARNS YERKES, Austin Teaching Fellow in Psychology. November 5, 1900.

[For 1901-02.]

- EDWARD LARRABEE ADAMS, Assistant in French and Spanish. April 29, 1901.
 OAKES AMES, Instructor in Botany. June 25, 1901.
 ABRAM PIATT ANDREW, Instructor in Political Economy. June 25, 1901.
 EBENEZER HENRY ARCHIBALD, Assistant in Chemistry. September 24, 1901.
 CHARLES HAMILTON ASHTON, Instructor in Mathematics. April 29, 1901.
 CHARLES HAMILTON AYRES, Instructor in Physics. June 3, 1901.
 WILLIAM WILSON BAKER, Instructor in Latin. June 10, 1901.
 HIRAM BINGHAM, Jr., Austin Teaching Fellow in History. June 25, 1901.
 HAROLD BISBEE, Assistant in Chemistry. September 24, 1901.
 OTIS FISHER BLACK, Instructor in Chemistry. September 24, 1901.
 ALBERT FRANCIS BLAKESLEE, Austin Teaching Fellow in Botany. June 10, 1901.
 RAYNAL CAWTHORNE BOLLING, Instructor in English. April 29, 1901.
 FREDERIC BONNET, Jr., Assistant in Chemistry. September 24, 1901.
 ROBERT STANLEY BREED, Austin Teaching Fellow in Zoölogy. June 25, 1901.
 HARRISON HITCHCOCK BROWN, Instructor in Mathematics. May 13, 1901.
 WILLIAM GARROTT BROWN, Lecturer on American History since the Civil War. May 27, 1901.
 ALPHONSE BRUN, Instructor in French. April 29, 1901.
 CHARLES JESSE BULLOCK, Instructor in Economics. May 27, 1901.
 HARRY LIONEL BURNHAM, Assistant in Government. June 25, 1901.
 FREDERICK ALEXANDER BUSHÉE, Assistant in Economics. September 24, 1901.
 DANIEL FRANCIS CALHANE, Assistant in Chemistry. September 24, 1901.
 ANTONIO ALFREDO CAPOTOSTO, Assistant in Italian. April 29, 1901.
 FREDERIC WALTON CARPENTER, Assistant in Zoölogy. April 29, 1901.
 GEORGE HENRY CHASE, Instructor in Greek. March 25, 1901.

- THATCHER CLARK, Assistant in French. April 29, 1901.
JOHN FIRMAN COAR, Instructor in German. June 3, 1901.
JOHN FELT COLE, Instructor in Astronomy. June 3, 1901.
WILLIAM MORSE COLE, Instructor in the Principles of Accounting. June 25, 1901.
JULIAN LOWELL COOLIDGE, Instructor in Mathematics. April 29, 1901.
REGINALD ALDWORTH DALY, Instructor in Geology. April 29, 1901.
EUGENE ABRAHAM DARLING, Instructor in Hygiene. September 24, 1901.
LUDWIG JOSEPH DEMETER, Austin Teaching Fellow in German. June 3, 1901.
ROLAND BURRAGE DIXON, Instructor in Anthropology. March 25, 1901.
WILLIAM EDWIN DORMAN, Assistant in History. June 25, 1901.
ALDRICH DURANT, Assistant in Mechanical Drawing. June 25, 1901.
WILLIAM CURTIS FARABEE, Austin Teaching Fellow in Anthropology. June 25, 1901.
SIDNEY BRADSHAW FAY, Austin Teaching Fellow in History. June 3, 1901.
ALFRED LAWRENCE FISH, Assistant in Political Economy. June 25, 1901.
AUGUSTUS HENRY FISCHE, Assistant in Chemistry. September 24, 1901.
ALFRED DOUGLASS FLINN, Instructor in Sanitary Engineering. September 24, 1901.
GEORGE SHANNON FORBES, Assistant in Chemistry. September 24, 1901.
ARTHUR BOWES FRIZELL, Instructor in Mathematics. May 13, 1901.
EDWARD DWIGHT FULLERTON, Assistant in Government. June 25, 1901.
ANDREW GARBUTT, Instructor in Modelling. June 25, 1901.
PHILIP JACOB GENTNER, Assistant in English. April 29, 1901.
ELLIOT HERSEY GOODWIN, Austin Teaching Fellow in Government. June 25, 1901.
CHESTER NOYES GREENOUGH, Instructor in English. April 29, 1901.
WILLIAM JAY HALE, Austin Teaching Fellow in Chemistry. June 25, 1901.
THOMAS HALL, Jr., Instructor in English. April 29, 1901.
JOHN GODDARD HART, Instructor in English. April 29, 1901.
HENRY HARRISON HAYNES, Instructor in Semitic Languages. March 25, 1901.
ARTHUR STEDMAN HILLS, Assistant in Elocution. June 25, 1901.
EDWIN BISSELL HOLT, Instructor in Psychology. June 25, 1901.
EDWARD VERMILYE HUNTINGTON, Instructor in Mathematics. September 24, 1901.
HENRY BARRETT HUNTINGTON, Instructor in English. April 29, 1901.
JOHN PERHAM HYLAN, Assistant in Philosophy. April 29, 1901.
RICHARD FAY JACKSON, Assistant in Chemistry. September 24, 1901.
KARL DETLEV JESSEN, Instructor in German. September 24, 1901.
MAXIMILIAN LINDSAY KELLNER, Lecturer on the History of Israel. March 25, 1901.
WALDO SHAW KENDALL, Instructor in German. June 3, 1901.
FRANK LOWELL KENNEDY, Instructor in Mechanical Drawing. May 13, 1901.
HOMER HUNTINGTON KIDDER, Instructor in English. April 29, 1901.
ALPHONSE MARIN LA MESLÉE, Instructor in French. April 29, 1901.
WILLIAM WITHERLE LAWRENCE, Instructor in German. June 3, 1901.
HOMER WILLIAMSON LE SOURD, Assistant in Physics. June 3, 1901.
GILBERT NEWTON LEWIS, Instructor in Chemistry. September 24, 1901.
MAURICE LAWRENCE MCCARTHY, Assistant in Chemistry. September 24, 1901.
WILLIAM EDWARD MCCLINTOCK, Instructor in Highway Engineering. May 13, 1901.
ROBERT MACDOUGALL, Instructor in Philosophy. March 25, 1901.

- WILLIAM EDWARD McELFRESH, Austin Teaching Fellow in Physics. June 8, 1901.
- THOMAS CALVIN McKAY, Assistant in Physics. June 3, 1901.
- EDMUND ROBERT OTTO VON MACH, Instructor in Greek Art. April 29, 1901.
- KENNETH LAMARTINE MARK, Assistant in Chemistry. September 24, 1901.
- GUSTAVUS HOWARD MAYNADIER, Instructor in English. April 29, 1901.
- HUGO RICHARD MEYER, Instructor in Parliamentary Government in Australia. June 3, 1901.
- DICKINSON SERGEANT MILLER, Instructor in Philosophy. March 25, 1901.
- LONDON CLARENCE MOORE, Assistant in Chemistry. September 24, 1901.
- SYLVANUS GRISWOLD MORLEY, Austin Teaching Fellow in Romance Languages and Literatures. June 25, 1901.
- MARTIN MOWER, Instructor in Fine Arts. April 29, 1901.
- JAMES AMBROSE MOYER, Instructor in Descriptive Geometry. September 24, 1901. Assistant in Mechanics and Experimental Engineering. May 18, 1901.
- DANIEL JAMES MURPHY, Assistant in History. June 25, 1901.
- WILLIAM ALLAN NEILSON, Instructor in English. April 29, 1901.
- ARTHUR EDWIN NORTON, Instructor in Mechanical Drawing. June 10, 1901.
- ARTHUR ORLO NORTON, Instructor in the History and Art of Teaching. March 25, 1901.
- CARLETON ELDRIDGE NOYES, Instructor in English. April 29, 1901.
- EDGAR WILLIAM OLIVE, Instructor in Botany. June 10, 1901.
- EDWIN WILLIAM PAHLOW, Assistant in History. June 25, 1901.
- JAMES HORACE PATTEN, Austin Teaching Fellow in Economics. June 25, 1901.
- OGLESBY PAUL, Assistant in Landscape Architecture. June 10, 1901.
- AMOS WILLIAM PETERS, Assistant in Zoölogy. April 29, 1901.
- GEORGE WASHINGTON PIERCE, Assistant in Physics. June 3, 1901.
- ARTHUR POPE, Austin Teaching Fellow in Fine Arts. June 25, 1901.
- MURRAY ANTHONY POTTER, Instructor in Romance Languages. April 29, 1901.
- HENRY LEE PRESCOTT, Instructor in English. April 29, 1901.
- LOUIS MARCUS PRINDLE, Austin Teaching Fellow in Mineralogy and Petrography. June 25, 1901.
- HIRAM STODDARD RALEY, Assistant in Chemistry. September 24, 1901.
- BENJAMIN RAND, Instructor in Philosophy. April 29, 1901.
- HERBERT WILBUR RAND, Instructor in Zoölogy. April 29, 1901.
- GEORGE SHARPE RAYMER, Instructor in Mining. May 13, 1901.
- MOTTE ALLSTON READ, Instructor in Geology. September 24, 1901.
- WILLIAM HOWELL REED, Jr., Austin Teaching Fellow in German. June 3, 1901.
- FREDERICK WILLIAM REYNOLDS, Austin Teaching Fellow in English. June 25, 1901.
- HENRY MILNER RIDEOUT, Instructor in English. April 29, 1901.
- WILLIAM ZEBINA RIPLEY, Lecturer on Economics. September 24, 1901.
- EDWARD ROBINSON, Lecturer on Classical Archaeology. April 29, 1901.
- JAMES BIRCH RORER, Austin Teaching Fellow in Botany. June 10, 1901.
- PIERRE LA ROSE, Instructor in English. April 29, 1901.
- DENMAN WALDO ROSS, Lecturer on the Theory of Design. June 25, 1901.
- ARTHUR WILLIAM RYDER, Assistant in Indo-Iranian Languages. June 25, 1901.
- HENRY LATIMER SEAVER, Instructor in English. April 29, 1901.
- CHARLES STEPHEN SCHAUGHNESSY, Austin Teaching Fellow in Engineering. June 25, 1901.

- ARTHUR ASAHEL SHURTLEFF, Instructor in Landscape Architecture. September 24, 1901.
- MACY MILLMORE SKINNER, Instructor in German. June 3, 1901.
- OLIVER MITCHELL WENTWORTH SPRAGUE, Instructor in Political Economy. June 25, 1901.
- CHARLES HENRY STEPHENS, Assistant in Government. June 25, 1901.
- WALTER DANA SWAN, Instructor in Architecture. June 25, 1901.
- CHARLES MARSHALL UNDERWOOD, Jr., Austin Teaching Fellow in Romance Languages and Literatures. June 25, 1901.
- JOSEPH PARKER WARREN, Assistant in Government. September 24, 1901.
- FRANK DEWITT WASHBURN, Assistant in the Architectural Library. April 29, 1901.
- EDGAR HUIDEKOPER WELLS, Assistant in English. June 3, 1901.
- ROGER CLARK WELLS, Austin Teaching Fellow in Chemistry. June 25, 1901.
- ROBERT MAXIMILIAN OTTOMAR WERNAER, Instructor in German. June 3, 1901.
- CHARLES HENRY WHITE, Instructor in Mining and Metallurgy. May 13, 1901.
- STEPHEN EDGAR WHITING, Instructor in Electrical Engineering. May 13, 1901.
- FREDERICK MASON WILDER, Assistant in Meteorology. April 29, 1901.
- WILLIAM FRANKLIN WILLOUGHBY, Instructor in Economics. May 27, 1901.
- JOSEPH EDMUND WOODMAN, Assistant in Geology. April 29, 1901.
- JAMES HAUGHTON WOODS, Instructor in Anthropology and Instructor in Philosophy. March 25, 1901.
- ROBERT MEARNES YERKES, Austin Teaching Fellow in Psychology. March 25, 1901.

[*For the Calendar Year 1900.*]

- CYRUS GUERNSEY PRINGLE, Botanical Collector. October 29, 1900.

DIVINITY SCHOOL.

[*Without limit of time.*]

- WILLIAM WALLACE FENN, Bussey Professor of Theology. November 26, 1900.
- GEORGE FOOT MOORE, Professor of Theology from March 1, 1902. September 24, 1901.
- FRANCIS GREENWOOD PEABODY, Dean of the Faculty of Divinity. June 10, 1901.
- JOSEPH HENRY THAYER, Bussey Professor of New Testament Criticism and Interpretation, Emeritus. March 25, 1901.

[*For 1900-01.*]

- SAMUEL SILAS CURRY, Instructor in Elocution. October 9, 1900.

LAW SCHOOL.

[*Without limit of time.*]

- CHRISTOPHER COLUMBUS LANGDELL, Dane Professor of Law, Emeritus. October 9, 1900.

[*For 1901-02.*]

- WILLIAM RODMAN PEABODY, Instructor in Criminal Law. May 13, 1901.
- JOSEPH LEWIS STACKPOLE, Jr., Lecturer on Patent Law. July 12, 1901.
- EZRA RIPLEY THAYER, Lecturer on Massachusetts Practice. May 13, 1901.
- BRUCE WYMAN, Lecturer on Suretyship and Mortgage. May 13, 1901.

MEDICAL SCHOOL.

[*Without limit of time, or for more than one year.*]

FRANK BURE MALLORY, Associate Professor of Pathology. June 25, 1901.

GEORGE GRAY SEARS, Assistant Professor of Clinical Medicine for five years from September 1, 1901. February 11, 1901.

[*For 1900-01.*]

ROGER TROWBRIDGE ATKINSON, Austin Teaching Fellow in Histology and Embryology. October 29, 1900.

DAVID NEWTON BLAKELEY, Assistant in Histology. October 9, 1900.

EUGENE ELLSWORTH EVERETT, Assistant in Bacteriology. October 29, 1900.

ALBERT CHAUNCEY EYCLESHYMER, Austin Teaching Fellow in Histology and Embryology. October 29, 1900.

HERBERT PARLIN JOHNSON, Austin Teaching Fellow in Comparative Pathology. October 29, 1900.

FRED ROBERT JOUETT, Assistant in Chemistry (second half-year). January 14, 1901.

WALTER APPLETON LANE, Assistant in Chemistry (second half-year). January 14, 1901.

SIDNEY ARCHER LORD, Assistant in Neurology. October 9, 1900.

GEORGE BURGESS MAGRATH, Austin Teaching Fellow in Pathology. November 12, 1900.

HENRY ORLANDO MARCY, JR., Assistant in Anatomy. October 9, 1900.

WILLIAM ROPES MAY, Assistant in Chemistry (second half-year). January 14, 1901.

WILLIAM HUNTINGTON PARKER, Assistant in Physiology. October 9, 1900.

ARTHUR KINGSBURY STONE, Assistant in the Theory and Practice of Physic from December 1, for the remainder of the academic year. December 10, 1900.

FREDERICK HERMAN VERHOEFF, Assistant in Pathology. October 9, 1900.

[*For 1901-02.*]

SEABURY WELLS ALLEN, Assistant in Anatomy. June 3, 1901.

JOHN LINCOLN AMES, Assistant in Clinical Medicine. June 3, 1901.

ROGER TROWBRIDGE ATKINSON, Instructor in Histology and Embryology. June 3, 1901.

GEORGE SHERWIN CLARKE BADGER, Assistant in the Theory and Practice of Physic. June 3, 1901.

FRANKLIN GREENE BALCH, Assistant in Clinical and Operative Surgery. June 3, 1901.

JOHN WASHBURN BARTOL, Assistant in Clinical Medicine. June 3, 1901.

HENRY HARRIS AUBREY BEACH, Lecturer on Surgery. June 3, 1901.

JOHN BAPT BLAKE, Assistant in Clinical and Operative Surgery. June 3, 1901.

JOHN TAYLOR BOTTOMLEY, Assistant in Clinical and Operative Surgery. June 3, 1901.

JOHN TEMPLETON BOWEN, Instructor in Dermatology. June 3, 1901.

CHARLES HERBERT BOXMEYER, Austin Teaching Fellow in Comparative Pathology. June 3, 1901.

- JOHN LEWIS BREMER, Assistant in Histology. June 3, 1901.
GEORGE WASHINGTON WALES BREWSTER, Assistant in Clinical and Operative Surgery. June 3, 1901.
EDWARD MARSHALL BUCKINGHAM, Clinical Instructor in Diseases of Children. June 3, 1901.
CHARLES SHOREY BUTLER, Assistant in Anatomy. June 3, 1901.
HUGH CABOT, Assistant in Operative Surgery. June 3, 1901.
RICHARD CLARKE CABOT, Assistant in Clinical Medicine. June 3, 1901.
WALTER BRADFORD CANNON, Instructor in Physiology. June 3, 1901.
FREDERICK EDWARD CHENEY, Assistant in Ophthalmology. June 3, 1901.
FARRAR COBB, Assistant in Clinical and Operative Surgery. June 3, 1901.
ERNEST AMORY CODMAN, Assistant in Clinical and Operative Surgery. June 3, 1901.
JOHN MATTHEW CONNOLLY, Assistant in Chemistry. June 3, 1901.
ALGERNON COOLIDGE, Jr., Clinical Instructor in Laryngology. June 3, 1901.
EDWARD COWLES, Clinical Instructor in Mental Diseases. June 3, 1901.
GEORGE ARTHUR CRAIGIN, Assistant in Diseases of Children. June 3, 1901.
EUGENE ANTHONY CROCKETT, Assistant in Otology. June 3, 1901.
ELBRIDGE GERRY CUTLER, Instructor in the Theory and Practice of Physic. June 3, 1901.
LINCOLN DAVIS, Assistant in Anatomy. June 3, 1901.
THOMAS AMORY DEBLOIS, Clinical Instructor in Laryngology. June 3, 1901.
FRANCIS PARKMAN DENNY, Assistant in Bacteriology. June 3, 1901.
JAMES CROWLEY DONOGHUE, Assistant in Histology. June 3, 1901.
SAMUEL HOLMES DURGIN, Lecturer on Hygiene. June 3, 1901.
EDWIN WELLES DWIGHT, Instructor in Legal Medicine and Assistant in Clinical and Operative Surgery. June 3, 1901.
JOHN WHEELOCK ELLIOT, Lecturer on Surgery. June 3, 1901.
EUGENE ELLSWORTH EVERETT, Assistant in Bacteriology. June 3, 1901.
JOHN WOODFORD FARLOW, Clinical Instructor in Laryngology. June 3, 1901.
GEORGE WASHINGTON GAY, Lecturer on Surgery. June 3, 1901.
CHARLES MONTRAVILLE GREEN, Secretary of the Faculty of Medicine. June 3, 1901.
ROBERT BATTEY GREENOUGH, Assistant in Surgery. June 3, 1901.
PHILIP HAMMOND, Assistant in Otology. June 3, 1901.
GEORGE HAVEN, Instructor in Gynaecology. June 3, 1901.
HENRY FOX HEWES, Instructor in Clinical Chemistry. June 3, 1901.
FRANK ALBERT HIGGINS, Instructor in Obstetrics and Assistant in Gynaecology. June 3, 1901.
JOHN HOMANS, Lecturer on Surgery. June 3, 1901.
EDWIN EVERETT JACK, Assistant in Ophthalmology. June 3, 1901.
HENRY JACKSON, Instructor in Clinical Medicine. June 3, 1901.
JAMES MARSH JACKSON, Assistant in Clinical Medicine. June 3, 1901.
JAMES OSCAR JORDAN, Assistant in Materia Medica. June 3, 1901.
ELLIOT PROCTOR JOSLIN, Assistant in the Theory and Practice of Physic. June 3, 1901.
PHILIP COOMBS KNAPP, Clinical Instructor in Diseases of the Nervous System. June 3, 1901.
WALDEMAR KOCH, Assistant in Physiology. June 3, 1901.
MAYNARD LADD, Assistant in Physiological Chemistry and in Diseases of Children. June 3, 1901.

- WALTER BRACKETT LANCASTER, Assistant in Ophthalmology. June 3, 1901.
EDWARD BINNEY LANE, Clinical Instructor in Mental Diseases. June 3, 1901.
RALPH CLINTON LARRABEE, Assistant in Histology. June 3, 1901.
FREDERIC THOMAS LEWIS, Austin Teaching Fellow in Histology and Embryology. June 3, 1901.
RALPH STATNER LILLIE, Assistant in Physiology. June 3, 1901.
SIDNEY ARCHER LORD, Assistant in Neurology. June 3, 1901.
HOWARD AUGUSTUS LOTHROP, Assistant in Surgery. June 3, 1901.
FRED BATES LUND, Assistant in Clinical and Operative Surgery. June 3, 1901.
JOHN HILDRETH MCCOLLOM, Instructor in Contagious Diseases. June 3, 1901.
GEORGE BURGESS MAGRATH, Assistant in Pathology. June 3, 1901.
HENRY ORLANDO MARCY, Jr., Assistant in Anatomy. June 3, 1901.
SAMUEL JASON MIXTER, Assistant in Operative Surgery. June 3, 1901.
GEORGE HOWARD MONKS, Instructor in Clinical Surgery and Assistant in Operative Surgery. June 3, 1901.
JOHN LOVETT MORSE, Instructor in Diseases of Children. June 3, 1901.
HARRIS PEYTON MOSHER, Assistant in Anatomy. June 3, 1901.
JAMES GREGORY MUMFORD, Assistant in Clinical and Operative Surgery. June 3, 1901.
JOHN CUMMINGS MUNRO, Instructor in Surgery. June 3, 1901.
PERCY MUSGRAVE, Assistant in Chemistry. June 3, 1901.
FRANKLIN SPILMAN NEWELL, Assistant in Obstetrics and Gynaecology. June 3, 1901.
EDWARD HALL NICHOLS, Instructor in Surgical Pathology. June 3, 1901.
JAY BERGEN OGDEN, Instructor in Clinical Chemistry. June 3, 1901.
CALVIN GATES PAGE, Assistant in Bacteriology. June 3, 1901.
HENRY JOSEPH PERRY, Assistant in Bacteriology. June 3, 1901.
CHARLES ALLEN PORTER, Instructor in Surgery. June 3, 1901.
ABNER POST, Instructor in Syphilis. June 3, 1901.
JOSEPH HERSEY PRATT, Instructor in Pathology. June 3, 1901.
WILLIAM HERBERT PRESCOTT, Assistant in Clinical Medicine. June 3, 1901.
ALEXANDER QUACKENBOSCH, Assistant in Ophthalmology. June 25, 1901.
WILLIAM HENRY ROBEY, Jr., Assistant in Bacteriology. June 3, 1901.
CHARLES LOCKE SCUDDER, Assistant in Clinical and Operative Surgery. June 3, 1901.
WILLIAM HENRY SMITH, Assistant in Clinical Medicine. June 3, 1901.
MYLES STANDISH, Instructor in Ophthalmology. June 3, 1901.
FREDERICK WINSLOW STETSON, Assistant in Anatomy. June 3, 1901.
ARTHUR KINGSBURY STONE, Assistant in the Theory and Practice of Physic. June 3, 1901.
MALCOLM STORER, Assistant in Gynaecology. June 3, 1901.
LAWRENCE WATSON STRONG, Assistant in Hygiene. June 3, 1901.
HOWARD TOWNSEND SWAIN, Assistant in Obstetrics. June 3, 1901.
EDWARD WYLLYS TAYLOR, Instructor in Neuropathology. June 3, 1901.
PAUL THORNDIKE, Instructor in Genito-Urinary Surgery. June 3, 1901.
MAURICE PAUL OCTAVE VEJUX-TYRDE, Assistant in Pharmacology. June 3, 1901.
FREDERICK HERMAN VERHOEFF, Assistant in Pathology. June 3, 1901.
HERMAN FRANK VICKERT, Instructor in Clinical Medicine. June 3, 1901.
GEORGE LINCOLN WALTON, Clinical Instructor in Diseases of the Nervous System. June 3, 1901.

- JOHN WARREN, Demonstrator of Anatomy. June 3, 1901.
 FRANCIS SEDGWICK WATSON, Lecturer on Genito-Urinary Surgery. June 3, 1901.
 JOSEPH DEUTSCH WEIS, Assistant in Bacteriology. June 3, 1901.
 CHARLES JAMES WHITE, Assistant in Dermatology. June 3, 1901.
 FRANKLIN WARREN WHITE, Assistant in the Theory and Practice of Physic. June 3, 1901.
 GEORGE SHATTUCK WHITESIDE, Assistant in Anatomy. June 3, 1901.
 WILLIAM WHITTRIDGE WILLIAMS, Assistant in Pathology. July 12, 1901.
 CHARLES FRANCIS WITHINGTON, Instructor in Clinical Medicine. June 3, 1901.
 FREDERICK ADAMS WOODS, Instructor in Histology and Embryology. June 3, 1901.
 JAMES HOMER WRIGHT, Instructor in Pathology. June 3, 1901.
 ERNEST BOYEN YOUNG, Assistant in Anatomy. June 3, 1901.

DENTAL SCHOOL.

[For 1900-01.]

- GEORGE CHANDLER BALDWIN, Assistant in Oral Surgery. October 29, 1900.
 CHARLES WILLIAM ROGERS, Assistant in Dental Materia Medica. October 29, 1900.

[For 1901-02.]

- LAWRENCE WILLS BAKER, Assistant in Orthodontia. June 3, 1901.
 GEORGE CHANDLER BALDWIN, Assistant in Oral Surgery. June 3, 1901.
 EDWIN CARTER BLAISDELL, Instructor in Operative Dentistry. June 3, 1901.
 FREDERICK BRADLEY, Instructor in Operative Dentistry. June 3, 1901.
 BURT MYRON BRISTOL, Instructor in Operative Dentistry. June 3, 1901.
 ALLEN STANLEY BURNHAM, Instructor in Mechanical Dentistry. June 3, 1901.
 ASHER HARRIMAN ST. CLAIR CHASE, Assistant Demonstrator of Mechanical Dentistry. June 3, 1901.
 ERNEST HOWARD CHUTE, Instructor in Mechanical Dentistry. June 3, 1901.
 DWIGHT MOSES CLAPP, Clinical Lecturer on Operative Dentistry. June 3, 1901.
 HAROLD DEWITT CROSS, Demonstrator of Mechanical Dentistry. June 3, 1901.
 DWIGHT WARD DICKINSON, Assistant Demonstrator of Operative Dentistry. June 3, 1901.
 JOHN DANA DICKINSON, Clinical Instructor in Mechanical Dentistry. June 3, 1901.
 FORREST GREENWOOD EDDY, Instructor in Operative Dentistry. June 3, 1901.
 ARTHUR WARREN ELDRED, Instructor in Mechanical Dentistry. June 3, 1901.
 EDWIN LINWOOD FARRINGTON, Instructor in Operative Dentistry. June 3, 1901.
 GEORGE LINCOLN FORREST, Instructor in Operative Dentistry. June 3, 1901.
 HARRY LINWOOD GRANT, Instructor in Mechanical Dentistry. June 3, 1901.
 GEORGE RUFUS GRAY, Instructor in Operative Dentistry. June 3, 1901.
 FRANCIS HERBERT HARDING, Instructor in Operative Dentistry. June 3, 1901.
 ERNEST JEWETT HART, Instructor in Extracting and Anaesthesia. June 3, 1901.
 THOMAS BERNARD HAYDEN, Instructor in Mechanical Dentistry. June 3, 1901.
 ELLIS PROCTOR HOLMES, Instructor in Operative Dentistry. June 3, 1901.
 ROBERT JOHN McMEEKIN, Demonstrator of Operative Dentistry. June 3, 1901.

GEORGE HOWARD MONKS, Instructor in Surgical Pathology. June 3, 1901.
 LESLIE HERBERT NAYLOR, Instructor in Operative Dentistry. June 3, 1901.
 JOSEPH TOTTEN PAUL, Instructor in Operative Dentistry. June 3, 1901.
 CHARLES ERNEST PERKINS, Instructor in Operative Dentistry. June 3, 1901.
 CHARLES WILLIAM RODGERS, Assistant in Dental Materia Medica. June 3, 1901.
 HENRY CARLTON SMITH, Assistant in Chemistry. June 3, 1901.
 WILLIAM DANIEL SQUAREBRIGS, Instructor in Extracting and Anaesthesia.
 June 3, 1901.
 WILFRED HARLOW STARRATT, Instructor in Operative Dentistry. June 3, 1901.
 ARTHUR HENRY STODDARD, Clinical Lecturer on Mechanical Dentistry. June
 3, 1901.
 EZRA FLETCHER TAFT, Instructor in Operative Dentistry. June 3, 1901.
 EDWARD WYLLYS TAYLOR, Instructor in Neurology. June 3, 1901.
 HENRY LAURISTON UPHAM, Instructor in Operative Dentistry. June 3, 1901.
 EVAN PARKER WENTWORTH, Instructor in Operative Dentistry. June 3, 1901.
 JULIUS GEORGE WILLIAM WERNER, Clinical Instructor in Operative Dentistry.
 June 3, 1901.

VETERINARY SCHOOL.

[For 1900-01.]

ALBERT JAMES SHELDON, Assistant Surgeon at the Veterinary Hospital. Novem-
 ber 12, 1900.

BUSSEY INSTITUTION.

[For 1901-02.]

FRANK THOMPSON DILLINGHAM, Assistant in Chemistry. June 25, 1901.
 HENRY HEYWOOD FOX, Instructor in Mathematics and Surveying. September
 24, 1901.

OTHER APPOINTMENTS.

HENRY PICKERING WALCOTT, Chairman of the Corporation during the absence
 of the President; a member of all the Faculties of the University, with
 the powers and duties of the President therein during the absence of the
 President; to act as the ordinary medium of communication between the
 Corporation and the Board of Overseers during the absence of the Presi-
 dent. November 26, 1900.
 GEORGE T. PURVES, Lecturer on the William Belden Noble Foundation for the
 year 1901-02. February 25, 1901.
 JOHN GEORGE JACK, Lecturer at the Arnold Arboretum for the calendar years
 1900 and 1901.
 WALTER BRADFORD CANNON, Auditor of the Randall Hall Association for one
 year from September 1, 1900. October 9, 1900.
 JEROME DAVIS GREENE, Secretary to the President, from August 1, 1901.
 September 24, 1901.

MEMBERS OF THE ADMINISTRATIVE BOARD OF HARVARD COLLEGE.

[For 1901-02.]

SEPTEMBER 24, 1901.

LEBARON RUSSELL BRIGGS, <i>Dean</i> .	GEORGE WASHINGTON CRAM.
ROBERT WHEELER WILLSON.	ROBERT DECOUECY WARD.
CHARLES POMEROY PARKER.	CHARLES BURTON GULICK.
CHARLES GROSS.	FRED NORRIS ROBINSON.
CHARLES HALL GRANDGENT.	JAY BACKUS WOODWORTH.
JOHN HAYS GARDINER.	CHARLES HENRY CONRAD WRIGHT.
ARCHIBALD CARY COOLIDGE.	RICHARD COBB.
LEWIS JEROME JOHNSON.	CHARLES PALACHE.
JAMES KELSEY WHITTEMORE.	

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE LAWRENCE SCIENTIFIC SCHOOL.

[For 1901-02.]

NATHANIEL SOUTHGATE SHALER, <i>Dean</i> .	HEINRICH CONRAD BIERWIRTH.
IRA NELSON HOLLIS.	ROBERT TRACY JACKSON.
HERBERT LANGFORD WARREN.	JAMES LEE LOVE.
CHARLES ROBERT SANGER.	GEORGE HOWARD PARKER.
HENRY LLOYD SMYTH.	COMFORT AVERY ADAMS, Jr.

MEMBERS OF THE ADMINISTRATIVE BOARD OF THE GRADUATE SCHOOL.

[For 1901-02.]

SEPTEMBER 24, 1901.

JOHN HENRY WRIGHT, <i>Dean</i> .	HANS CARL GÜNTHER VON JAGEMANN.
CRAWFORD HOWELL TOY.	EDWARD HENRY STROBEL.
CHARLES LORING JACKSON.	ALBERT BUSHNELL HART.
WILLIAM MORRIS DAVIS.	GEORGE LYMAN KITTEDGE.
MINTON WARREN.	HUGO MÜNSTERBERG.
MAXIME BÖCHER.	

PROCTORS.

[For 1900-01.]

DWIGHT ST. JOHN BOBB, for the remainder of the academic year. February 11, 1901.
 HENRY COOK BOYNTON. October 9, 1900.
 SIDNEY BRADSHAW FAY. October 9, 1900.
 EDWARD DWIGHT FULLERTON. October 9, 1900.
 ARTHUR STEDMAN HILLS. October 29, 1900.
 KENNETH GRANT TREMAYNE WEBSTER. November 19, 1900.
 ARTHUR BRYANT WHITNEY, from May 4, 1901, for the remainder of the academic year. March 25, 1901.

[For 1901-02.]

APPOINTED JUNE 10, 1901, UNLESS OTHERWISE STATED.

ELLES HAMILTON AYRES.	WILLIAM JAY HALE.
HARD CLARK BARBER.	ARTHUR STEDMAN HILLS.
LIAM LESTER BARNES, September 24, 1901.	JOHN PERHAM HYLAN.
STALEY BEALS.	WILLIAM EDWARD McELFRESH.
ELLES BEARDSLEY.	LEON CARROLL MARSHALL.
ELLES FRANCIS DORR BELDEN.	JAMES AMBROSE MOYER.
WIGHT ST. JOHN BOBB.	JAMES HORACE PATTEN.
RY COOK BOYNTON.	WILLIAM THOMAS REID, Jr., Septem- ber 24, 1901.
ES FREEMAN CURTIS.	FREDERICK WILLIAM REYNOLDS.
COLM DONALD.	GEORGE RUSSELL STOBBS.
LIAM PAINE EVERTS.	HENRY SMITH THOMPSON, September 24, 1901.
EY BRADSHAW FAY.	KENNETH GRANT TREMATNE WEBSTER.
RITT LYNDON FERNALD.	ARTHUR BRYANT WHITNEY, March 25, 1901.
ARD DWIGHT FULLERTON.	LOUIS ELIOT WYMAN.
IP JACOB GENTNER.	
MAS HARVEY HAINES.	
	ROBERT MEARNS YERKES.

MEMBERS OF THE BOARD OF EXAMINATION PROCTORS.

[For 1900-01.]

APPOINTED OCTOBER 29, 1900, UNLESS OTHERWISE STATED.

BY ALLSTON AMES.	WALDEMAR KOCH.
LIAM WILSON BAKER.	GEORGE RICHARD LYMAN.
STALEY BEALS.	WILLIAM EDWARD McELFRESH.
RGE HUBBARD BLAKESLEE.	THOMAS CALVIN MCKAY.
RY COOK BOYNTON.	GEORGE FREDERICK WOODWARD MARK.
RISON HITCHCOCK BROWN.	KENNETH LAMARTINE MARK.
IEL FRANCIS CALHANE.	RAYMOND TASKER PARKE.
LACE PATTEN COHOE.	JAMES HORACE PATTEN.
HARD CRAWLEY.	WILLIAM HENRY POWERS.
LACE BRETT DONHAM.	CHARLES WILLIAM PRENTISS.
LIAM EDWIN DORMAN.	HERBERT WILBUR RAND.
ARD BLAIR EARLE.	FREDERICK WILLIAM REYNOLDS.
LIAM CURTIS FARABEE.	WILLIAM DANIEL SHUE, November 12, 1900.
EY BRADSHAW FAY.	GEORGE RUSSELL STOBBS.
ARD DWIGHT FULLERTON.	JONAS VILES.
MAS HARVEY HAINES.	WILLIAM ABBOTT WILLARD.
ELLES THOMSON HASKELL.	ALFRED WILLIAM GUNNING WILSON.
RGE WILLIAM HEIMROD.	JOSEPH EDMUND WOODMAN.
RENCE JOSEPH HENDERSON.	HENRY AARON YEOMANS.
OLD LINCOLN HUGHES.	ROBERT MEARNS YERKES.
ES MUNROE JOHNSON.	

PREACHERS TO THE UNIVERSITY.

[For 1901-02.]

JUNE 25, 1901.

LYMAN ABBOTT.
FRANCIS BROWN.

PAUL REVERE FROTHINGHAM.
GEORGE FOOT MOORE.
ENDICOTT PEABODY.

COMMITTEE ON THE REGULATION OF ATHLETIC SPORTS.

[For 1901-02.]

JUNE 25, 1901.

Faculty Members:
IRA NELSON HOLLIS.
ARCHIBALD CARY COOLIDGE.
THOMAS NIXON CARVER.

Graduate Members:
JAMES JACKSON STORROW.
ROLAND WILLIAM BOYDEN.
BERTRAM GORDON WATERS.

TRUSTEES OF THE HARVARD UNION.

MAY 13, 1901.

IRA NELSON HOLLIS.
ROBERT BACON.
WILLIAM ROSCOE THAYER.

JAMES JACKSON STORROW.
WILLIAM COWPER BOYDEN.
CHARLES FRANCIS ADAMS, 2d.
MALCOLM DONALD.

TRUSTEES OF THE MUSEUM OF FINE ARTS.

[For one year from January 1, 1901.]

NOVEMBER 19, 1900.

WILLIAM STURGIS BIGELOW.
ARTHUR TRACY CABOT.

ARTHUR ASTOR CAREY.

ORDINARY DEGREES CONFERRED IN 1899, 1900,
AND 1901.

	1899.	1900.	1901.
Belors of Arts	448	404	457
Belors of Arts out of course	25	15	26
Belors of Science	46	59	75
Belors of Science out of course	11	6	4
Belors of Divinity	2	5	2
Belors of Laws	109	126	136
Belors of Laws out of course	8	8	9
Belors of Agricultural Science	0	0	2
Btors of Medicine	108	130	116
Btors of Medicine out of course	1	0	4
Btors of Dental Medicine	36	33	29
Btors of Dental Medicine out of course	1	0	0
Btors of Veterinary Medicine	8	7	6
Btors of Veterinary Medicine out of course	1	0	1
Btors of Arts	118	125	119
Btors of Arts out of course	6	9	6
Btors of Science	6	1	7
Btors of Science out of course	0	0	3
Btors of Philosophy	23	35	29
Btors of Science	1	1	0
Totals	953	964	1031

PUBLICATIONS OF THE MUSEUM OF COMPARATIVE
ZOOLOGY FOR THE ACADEMIC YEAR 1900-01.

Bulletin : —

Vol. XXXVI.

No. 5. Contributions from the Zoölogical Laboratory. No. 114. The Development of the Mouth-parts of *Anurida maritima* Guér. By Justus Watson Folsom. 73 pp. 8 Plates. October, 1900.

No. 6. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, to the West Coast of Mexico, and in the Gulf of California, in Charge of Alexander Agassiz, carried on by the U. S. Fish Commission Steamer "Albatross," during 1891, Lieut. Commander Z. L. Tanner, U. S. N., commanding. XXVIII. Description of two new Lizards of the Genus *Anolis* from Cocos and Malpelo Islands. By Leonhard Stejneger. 6 pp. 1 Plate. November, 1900.

No. 7. Contributions from the Zoölogical Laboratory. No. 123. The Otocyst of Decapod Crustacea: its Structure, Development, and Functions. By C. W. Prentiss. 87 pp. 10 Plates. July, 1901.

No. 8. On a Collection of Birds from Liu Kiu Islands. By Outram Bangs. 17 pp. July, 1901.

Vol. XXXVIII. Geological Series, Vol. V.

No. 1. Notes on the Limestones and General Geology of the Fiji Islands, with special reference to the Lau Group. Based upon Surveys made for Alexander Agassiz. By E. C. Andrews. With a Preface by T. W. Edgeworth David. 50 pp. 40 Plates. November, 1900.

No. 2. The Structural Relations of the amygdaloidal Melaphyr in Brookline, Newton, and Brighton, Mass. By Henry T. Burr. 19 pp. 2 Plates. March, 1901.

No. 3. The Physiography of Acadia. By Reginald A. Daly. 34 pp. 11 Plates. March, 1901.

No. 4. An Excursion to the Grand Cañon of the Colorado. By W. M. Davis. 97 pp. 2 Plates. May, 1901.

Report : —

1899-1900. 41 pp. January, 1901.

TABLE II. — ILLNESS REPORT AS RELATED TO THE DIFFERENT SCHOOLS.

	College.					Scientific.					Law.	Grad.	Div.	Medical, Bussey, etc.	Totals.
	1	2	3	4	Sp.	1	2	3	4	Sp.					
Appendicitis	10	8	5	5	1	..	1	..	..	..	2	1	..	..	33
Chicken-pox . . . . .	..	1	2	1	..	..	1	1	..	..	..	..	..	..	6
"Colds"	282	372	245	183	54	75	47	13	16	15	44	26	4	20	1396
Constipation	4	5	2	..	..	..	..	..	..	..	3	..	..	..	14
Diarrhoea	30	53	36	20	11	16	7	5	..	2	1	3	..	..	184
Diphtheria	2	3	3	..	1	..	2	..	..	..	..	..	..	1	12
Ears	11	10	6	4	1	1	1	..	1	..	2	2	..	..	43
Eyes	48	63	44	27	8	21	7	1	6	5	4	11	..	14	259
General Debility	13	19	15	13	7	6	4	1	2	2	3	9	1	..	95
Headache	36	51	14	16	1	16	3	2	..	2	3	2	..	1	147
Indigestion	85	108	61	65	18	25	20	6	..	6	6	10	..	1	411
Jaundice	5	2	5	3	..	..	1	..	..	..	..	1	..	..	17
La Grippe	63	57	47	34	13	14	9	4	4	5	9	13	1	3	276
Malaria	5	8	2	4	2	2	3	..	..	3	1	2	..	..	32
Measles . . . . .	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Miscellaneous	180	156	112	86	50	25	9	5	7	8	83	34	2	12	719
Mumps	8	12	6	6	2	5	1	..	..	..	19	4	..	3	66
Neuralgia	10	17	13	11	5	5	3	1	1	..	..	2	..	..	68
Overwork	8	15	10	11	6	1	3	1	1	..	11	9	3	2	80
Pneumonia	1	2	..	1	..	2	..	..	..	..	..	..	..	..	6
Rheumatism	10	13	7	8	1	3	1	..	2	2	1	4	1	..	53
Scarlet Fever	1	2	..	..	..	..	..	..	..	1	..	..	..	..	4
Skin Diseases	12	22	7	14	3	3	2	1	..	2	7	4	..	2	79
Surgical	80	91	74	60	7	30	16	6	7	7	15	15	1	20	429
Tonsillitis	37	34	30	14	7	14	4	2	1	1	8	1	1	4	158
Typhoid	1	2	4	1	..	3	..	1	..	..	3	..	..	..	15
Totals	942	1126	751	587	201	267	145	49	48	61	175	153	14	84	4603
Percentage	175	210	137	150	133	173	106	75	69	74	27	46	50	..	..

STATISTICS RELATING TO GRADUATION FROM HARVARD COLLEGE IN LESS THAN FOUR YEARS.

(See pp. 83-89.)

AVERAGE AGE

OF COLLEGE STUDENTS AT THE TIME OF THEIR ENTRANCE ON THE
FRESHMAN YEAR.

Classes entering 1856-1860	17 yrs., 10.86 mos.
1861-1865	18 " 4.81 "
1866-1870	18 " 4.67 "
1871-1875	18 " 6.71 "
1876-1880	18 " 10.10 "
1881-1885	18 " 11.52 "
1886-1890	19 " 3.63 "
1891-1895	19 " 1.43 "
1896-1900	19 " 0.48 "

These averages are made up from the tables in the President's Reports, which are "computed on the assumption that all who ever joined each class were admitted as Freshmen."

THE FOUR YEARS COLLEGE COURSE.

TOTAL AMOUNT OF WORK REQUIRED SINCE 1884, WHEN THE
FRESHMAN YEAR CEASED TO BE WHOLLY PRESCRIBED.

1884-1890	18.4 courses.
1890-1894	18.2 "
1894-1899	18 "
1899-	17* "

DEFICIENCIES

OF STUDENTS ENTERING THE FRESHMAN CLASS BY EXAMINATION
IN 1900.

Number admitted with no deficiency	241
" " deficient in such admission studies only as are not taught in College	42
" " deficient in admission studies taught in College, amounting to: $\frac{1}{2}$ course . .	91
1 " . .	65
$1\frac{1}{2}$ courses . .	29
2 " . .	16
$2\frac{1}{2}$ " . .	7
3 " . .	6
$3\frac{1}{2}$ " . .	4
Total number with deficiencies which may be made up by additional College work	218
Total number admitted by examination . .	501

* For students who fail to attain Grade C in English A, the total is 17.5 courses.

ANTICIPATION OF COLLEGE STUDIES.

The following table shows the number of students who have anticipated college work in various amounts, on their admission to the Freshman class, in the last four years :—

Amount anticipated	Number of Students			
	1897	1898	1899	1900
$\frac{1}{2}$ course	28	42	47	41
1 “	81	62	81	77
$1\frac{1}{2}$ courses	9	16	17	20
2 “	20	18	15	32
$2\frac{1}{2}$ “	1	6	4	2
3 “	3	4	5	6
$3\frac{1}{2}$ “ . . . . .	..	..	1	2
4 “ . . . . .	..	..	1	2
2 courses or more	24	28	26	44
1 course “ “	114	106	124	141
Total number of students anticipating	142	148	171	183
Total number of courses anticipated	160	170	192 $\frac{1}{2}$	230
Total number of students entering by examination	430	428	457	501

ADDITIONAL STUDIES.

(CLASS OF 1900.)

The following figures are based on the records of 395 students who received the degree of Bachelor of Arts in 1900, including 70 who had had leave of absence during their Senior year. Of these seventy, 11 completed more than the total number of courses (18) required for the degree.

The first table shows the extent to which additional studies were taken and completed by students of the Class of 1900.

Amount in excess of total requirement.	Number of Students.
$\frac{1}{2}$ course	59
1 "	53
$1\frac{1}{2}$ courses	31
2 "	17
$2\frac{1}{2}$ "	13
3 "	10
$3\frac{1}{2}$ "	4
4 "	12
$4\frac{1}{2}$ "	1
5 "	3
6 "	1
Total	204

The second table shows the work done in their Senior year, in excess of the amount needed to complete the total of 18 courses, by 182 of these students who had reached the beginning of that year with "additional" studies to their credit. Two of the 182 were on leave of absence.

Amount completed beyond what was required to make up the total of 18 courses.	Number of Students.
$\frac{1}{2}$ course	52
1 "	47
$1\frac{1}{2}$ courses	21
2 "	17
$2\frac{1}{2}$ "	10
3 "	10
$3\frac{1}{2}$ "	3
4 "	12
$4\frac{1}{2}$ "	4
5 "	4
$5\frac{1}{2}$ "	1
6 "	1
Total	182

Of these 182, 22 expected a part of the work of their Senior year to be counted for the degree of Master of Arts.

The students represented in the next table might have applied for leave to reduce their college work on the ground of having anticipated college studies at admission (see page 310), but refrained from doing so. The work anticipated constitutes therefore, in their case, a clear addition to the total requirement.

Amount anticipated.	Number of Students.
$\frac{1}{2}$ course	16
1 " "	19
$1\frac{1}{2}$ courses	5
2 " "	11
$2\frac{1}{2}$ " "	1
	—
Whole number of students	52
	—
Total number of courses anticipated . . .	59

GRADUATION IN THREE YEARS.

The following table shows the number of students who received the degree of Bachelor of Arts in each of the last five years after completing the work of the course in three years, and shows what became of them, so far as their destination is known.

Destination.	1896	1897	1898	1899	1900	Total in 5 years.
Harvard Law School	18	20	13	33	31	115
" Medical School . .	3	5	12	7	5	32
" Graduate School . .	2	1	3	8	8	22
" Divinity School . .	1	. .	. .	. .	1	2
Lawrence Scientific School .	. .	. .	. .	1	1	2
Other institutions . . . . .	. .	1	1	2	1	5
Teaching	2	6	1	1	3	13
Writing . . . . .	. .	. .	. .	. .	1	1
The Ministry . . . . .	. .	. .	. .	. .	1	1
Business . . . . .	. .	3	. .	3	15	21
Unknown	11	4	13	9	5	42
Whole number* completing course in 3 years	37	40	43	64	72	256
Number* completing course regularly in 4 years . . .	275	258	262	293	236	1324
Whole number† graduated A.B.	392	381	391	443	404	2011

* Not including students who were admitted to advanced standing or entered otherwise than by the regular admission examinations.

† Not including degrees granted out of course.

TEACHERS IN THE SUMMER SCHOOL FOR CUBAN
TEACHERS, 1901.

CHARLES CURTIS EATON,
ARTHUR FISHER WHITTEM,
NORMAN FISHER HALL,

LILLIAN ESTELLE CLARK,
HARRIET M. CUTLER,
ELIZABETH FORBES.



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TREASURER'S STATEMENT.



1901.



TREASURER'S STATEMENT.

TO THE BOARD OF OVERSEERS OF HARVARD COLLEGE : —

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending July 31, 1901, in the usual form.

The Funds separately invested, with the income thereof, are as follows : —

UNIVERSITY.	Principal. July 31, 1901.	Income.
George B. Dorr,		
University Houses and Lands,	\$115,966.56	\$3,515.03
George Draper (part),		
University Houses and Lands,	3,249.04	142.83
John Cowdin,		
Real Estate, Washington St., North, Boston, . . .	22,000.00	2,042.46
John C. Gray,		
University Houses and Lands,	25,000.00	757.76
Insurance and Guaranty,		
University Houses and Lands,	132,288.80	3,938.59
Walter Hastings,		
Real Estate, Sacramento St., Cambridge,	20,000.00	537.39
Joseph Lee,		
University Houses and Lands,	10,000.00	303.11
Francis E. Parker,		
University Houses and Lands,	113,817.44	3,449.88
William F. Weld,		
University Houses and Lands,	100,000.00	3,031.07
COLLEGE.		
Pennoyer Scholarships (part),		
Pennoyer Annuity in England,	4,444.44	117.63
Jonathan Phillips' Gift,		
\$10,000 City of Boston 3½'s,	10,000.00	350.00
Professorship of Hygiene (part),		
Policy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00
80 shares Chicago, Burlington & Quincy R.R., . .	15,681.85	
Scholarship of the Class of 1883,		
\$5,000 Brookline Gas Light Co. Gen'l M. 5's, . .	5,000.00	250.00
Toughton Scholarship (part),		
Real Estate in Dorchester,	1,294.80	
Amounts carried forward,	\$583,741.93	\$18,635.75

Amounts brought forward,		\$583,741.93	\$18,635.75
Samuel Ward's Gift,			
Ward's (Bumkin) Island, Boston Harbor, . . .		1.00	
Henry C. Warren (part),			
200 shares West End Street Railway, preferred (sold during year),			30.00
64	" Boston Elevated Railway (sold during year),		144.00
39	" First National Bank (sold during year),		156.00
84	" Boston & Albany R. R. " " "		357.00
David Ames Wells (part),			
\$4,000 Adams Express Co. Deb. 4's of 1948,		4,300.00	
2,000 Buffalo City Gas Co. 1st M. 5's of 1947, . .		1,500.00	
1,000 The Electric Corporation 7's of 1992,		1,000.00	
50 shares Cleveland & Pittsburg R.R.,		4,750.00	
20	" Illinois Central R.R.,	2,800.00	
17	" Manhattan R'y,	2,159.00	17.00
15	" Northern Pacific R'y, preferred,	1,455.00	15.00
21	" Pennsylvania R.R.,	1,556.00	
40	" Pittsburg, Fort Wayne & Chicago R.R.,	7,600.00	
20	" West Virginia Central & Pittsburg R'y,	1,600.00	
33	" The Pullman Co.,	7,029.00	
40	" Adams Express Co.,	6,560.00	
25	" Illinois & Miss. Telegraph Co.,	875.00	25.00
25	" Northwestern " " "	1,525.00	
50	" Western Union " " "	4,650.00	62.50
10	" The Electric Corporation, . . . . .	.40	
8	" General Electric Co.,	1,816.00	16.00
8	" Buffalo City Gas Co.,	64.00	
4	" American Light & Traction Co.,	60.00	
16	" " " " pref.,	1,520.00	
83	" American Surety Co.,	7,677.50	83.00
10	" Morton Trust Co.,	7,250.00	
10	" New York Security & Trust Co.,	8,000.00	
11	" Walter A. Wood M. & R. Machine Co.,	550.00	
16	" Western Gas Co. (sold during year),		48.00
1 share New York Evening Post Publishing Co.,		600.00	

LIBRARY.

Ichabod Tucker (part),			
Policy of Mass. Hospital Life Insurance Co., . . .		5,000.00	200.00

LAW SCHOOL.

James Barr Ames Prize (part),			
Personal Note,		2,800.00	116.00
Amounts carried forward,		\$668,339.83	\$19,905.75

Amounts brought forward, \$668,839.88 \$19,905.25

MEDICAL SCHOOL.

Alvin Ellis (part),		
120 shares Old Colony R. R. (sold during year), . .		210.00
156 " New York, New Haven & Hartford R. R. (sold during year),		312.00
150 " Boston & Albany R. R. (sold during year),		637.50
50 " Boston & Lowell R. R. " " "		200.00
91 " Boston & Maine R. R., preferred (sold during year),		273.00
200 " Chicago, Burlington & Quincy R. R., .	26,585.00	1,300.00
8 " Old Boston National Bank (sold during year),		16.00
17 " Merchants National Bank (sold during year),		51.00
Interest on receipt for sale of Boston & Lowell R. R. stock,		6.75
Real Estate in Boston,	26,462.80	633.59
Lucy Ellis (part),		
Real Estate in Eden, Bar Harbor, Maine,	10,000.00	
George C. Shattuck (part),		
\$25,000 Kansas City, Fort Scott & Memphis R. R. Cons. M. 6's,	30,500.00	

OBSERVATORY.

Advancement of Astronomical Science (part),		
30 shares Massachusetts Electric Companies, pref.,	2,781.90	
10 " New York, New Haven & Hartford R. R.,	2,154.80	
20 " West End Street Railway,	1,934.80	

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

Peabody Building (part),	} \$54,000 Kansas & Mis- souri R. R. 1st M. 5's,	11,512.72	622.32
Peabody Collection (part),		19,218.64	1,038.84
Peabody Professor (part),		19,218.64	1,038.84
Thaw (part) (\$8.48 deducted from income for sinking premium),			
\$20,000 Girard Point Storage Co. 1st M. 3½'s, . . .		20,330.54	691.52

SPECIAL FUNDS.

Hussey Trust,		
Real Estate,	392,710.18	19,789.52
Robert Troup Paine (accumulating),		
\$43,000 Massachusetts 3½'s (\$165.60 deducted from income for sinking premium),	45,122.18	1,339.40
and of the Class of 1834,		
Policy of Mass. Hospital Life Insurance Co., . . .	1,000.00	40.00
Amounts carried forward,	\$1,277,872.03	\$48,105.58

Amounts brought forward,			\$1,277,872.03	\$48,105.53
Fund of the Class of 1844,				
Policy of Mass. Hospital Life Insurance Co., . . .	6,500.00	260.00		
Fund of the Class of 1853,				
Policy of Mass. Hospital Life Insurance Co., . . .	3,725.00	149.00		
Charles L. Hancock Bequest (part),				
Real Estate in Chelsea,	710.00			
Calvin and Lucy Ellis Aid (part),				
Real Estate in Boston,	26,462.80	633.59		
10 shares Improved Dwelling House Association (sold during year),		10.00		
Price Greenleaf. (\$961.20 deducted from income for sinking premiums.) The total amount of this Fund is \$719,291.31, which is invested as follows:—				
\$12,200 Rutland R. R. 6's,	12,443.99	569.33		
3,000 Chicago, Burl. & Quincy R. R. 4's,	2,880.00	120.00		
290 shares Northern R. R. (N. H.),	29,290.00	1,740.00		
800 " Rutland " preferred,	28,000.00	3,200.00		
317 " Boston & Maine R. R.,	48,724.00	2,219.00		
360 " Boston & Lowell "	46,800.00	2,880.00		
237 " Fitchburg R. R., preferred,	22,306.27	1,185.00		
355 " Old Colony "	63,190.00	2,485.00		
161 " Chicago, Burl. & Quincy R. R.,	20,188.55	983.50		
20 " N. Y. Central & Hudson River R. R., . .	2,260.00	100.00		
52 " West End Street Railway, preferred, .	4,305.56	208.00		
34 " Central Vermont R'y,	428.72			
15 " Boston Real Estate Trust,	20,703.75	675.00		
100 " Paddock Bldg. Trust (65% paid in), .	6,500.00	220.00		
\$34,000 New York Central & Hudson River R. R.				
(Michigan Central Collateral) 3½'s,	28,412.10	1,190.00		
43,500 Central Vermont R'y 1st M. 4's,	37,845.00	1,740.00		
50,000 Union Pacific R. R. 1st M. & L. G. 4's, . .	44,625.00	2,000.00		
2,000 Chicago, Burl. & Quincy R. R. 3½'s, . . .	2,000.00	70.00		
26,000 Burl. & Mo. R. R. in Neb. non ex. 6's, . .	27,438.97	1,208.86		
50,000 Metropolitan Tel. & Tel. Co. 1st M. 5's, . .	49,750.00	2,500.00		
25,000 New England " " " 6's,	25,371.09	1,425.78		
50,000 Chic. Junc. R'ys & Union Stock Yards 5's, .	47,000.00	2,500.00		
70,000 Broadway Realty Co. Purchase money 1st M. 5's,	74,697.34	3,315.78		
70,000 American Bell Telephone Co. 4's,	70,902.65	2,671.05		
Cash in New England Trust Co.,	3,228.32	62.26		
Totals,			\$2,034,561.14	\$84,426.68

The other Funds are invested as a whole. The general investments are stated in detail on pages 38, 39, and 40 of this report. The usual summary of them, and of their income, is as follows:—

Investments.	Principal, Aug. 1, 1900.	Principal, July 31, 1901.	Income.
Notes, Mortgages, &c.,	\$913,000.00	\$983,000.00	\$47,939.35
United States Bonds,	467,690.80	464,955.88	13,265.08
Railroad Bonds,	3,676,903.60	3,867,228.70	160,388.51
Sundry Bonds,	1,412,182.60	1,512,037.89	62,667.51
Railroad Stocks,	513,381.57	568,998.46	27,980.00
Manufacturing Stocks,	39,022.29	39,022.29	4,161.00
Real Estate Trust Stocks,	330,000.00	278,595.34	10,733.87
Real Estate,	2,552,318.30	2,753,541.92	146,106.64
Brattle Street Reversion (1918), . .	1,015.00	1,015.00	
Advances to Bussey Trust,	29,785.51	29,785.51	1,489.28
" " Calvin & Lucy Ellis			
Real Estate,	166.32		8.32
" " Sch. of Veterinary Med.,	24,406.01	24,406.01	1,220.30
" " Peabody Museum of			
Am. Archaeology and			
Ethnology,	639.01	1,607.30	31.95
" " Botanic Department, . .	15,549.39	18,625.67	777.46
" " Gray Herbarium, . . .	25.41		1.27
" " Dining Hall Association,	14,001.50	12,522.66	700.08
" " Randall Hall "	22,875.71	33,431.27	1,143.79
" " Rotch Laboratory, . .		6,637.62	
" " Sundry Accounts, . . .	1,076.25		
Baring Brothers & Company,	2,488.25	2,682.59	76.71
Term Bills due in October,	229,150.09	236,731.03	
" " overdue,	8,823.89	9,065.28	
Cash in Suffolk National Bank, . . .	9,526.65	26,480.66	100.68
" National Union Bank, . . .	157,002.63	185,570.67	3,794.02
" Old Boston National Bank, .	69,748.60		319.89
" hands of Bursar,	16,980.44	29,035.72	
Totals of general investments, . .	\$10,507,759.82	\$11,084,977.47	\$482,905.71
Totals of special investments, . .	2,106,688.37	2,034,561.14	84,426.68
Amounts,	\$12,614,448.19	\$13,119,538.61	\$567,332.39

The sums of \$11,997.03 and \$1,135.28 have been deducted from the income of all bonds bought at a premium and held respectively as general and special investments, and have been applied, as the fair yearly repayment from income, towards sinking the whole of these premiums at the maturity of the bonds.

The net income of the general investments has been divided at the rate of $4\frac{70}{100}$ per cent. among the Funds to which they belong, after allowing special rates to certain temporary Funds and balances. The fraction, which was \$299.63, has been placed as usual to the credit of the University account.

The rate of income compared with that for 1899–1900 shows an increase of fourteen one-hundredths of one per cent.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments; the income and the expenditure for the Lawrence Scientific School and the College being combined in the College account : —

Interest on Funds for

University Salaries and Expenses,	\$65,850.84
Library Salaries and Expenses (not books), . . .	24,554.18
College Salaries and Expenses,	61,718.18
Gymnasium, and repairs on College buildings, . .	none.
College Term Bills,	484,974.00

Sundry receipts, as follows : —

Gifts for Salaries and Expenses,	\$5,057.11	
Use of buildings (not University Houses and Lands),	1,560.00	
Laboratory and other fees, &c.,	49,810.10	
Sales of catalogues, pamphlets, &c.,	3,877.20	
Repayments of loans,	237.62	
Sundry receipts and repayments,	<u>436.76</u>	<u>60,978.79</u> <u>\$697,575.99</u>

Expended for

University Salaries and Expenses,	\$84,829.27	
Library Salaries and Expenses (not books),	42,525.89	
College Expenses,	112,497.64	
College Salaries, for instruction,	381,184.99	
Gymnasium Expenses,	9,396.18	
Repairs, insurance and cleaning on College buildings not valued in Treasurer's books,	49,637.66	
Scholarships paid by the University,	3,000.00	
“ “ “ College,	3,250.00	
Exhibitions “ “ “	450.00	
Deficit in the School of Veterinary Medicine for 1900– 1901, assumed by the University,	<u>8,456.45</u>	<u>695,228.08</u>
Balance, showing the surplus for the year, which has been credited to Insurance and Guaranty Fund, . .		\$2,347.91

The University, College, Lawrence Scientific School, and Library accounts, taken together, after paying the Veterinary School deficit of \$8,456.45, show a surplus of \$2,347.91. In 1899–1900 there was a deficit of \$36,669.51.

The Divinity School has a surplus of \$223.33. In 1899–1900 there was a deficit of \$642.84.

The Law School has a surplus of \$33,225.35. In 1899-1900 the surplus was \$32,870.16.

The Medical School has a surplus of \$7,609.83. In 1899-1900 the surplus was \$1,306.84.

The Dental School has a surplus of \$4,086.98. In 1899-1900 the surplus was \$4,885.70.

The Museum of Comparative Zoölogy used the income of its restricted Funds as required by the conditions of gift. It has a surplus of unrestricted income of \$2,453.50. In 1899-1900 the surplus was \$6,098.81.

The General Account of the Observatory has a surplus of \$543.44. In 1899-1900 the surplus was of \$2,431.64. The income of the Boyden Fund has been used for work in Peru, and the usual large gifts from Mrs. Draper have been used for the special research work of the Draper Memorial.

The Bussey Institution has a surplus of \$3,767.09, after paying \$2,454.34 towards the cost of new greenhouses. In 1899-1900 there was a surplus of \$6,794.85.

The Peabody Museum has a deficit of \$968.29. In 1899-1900 the deficit was \$115.81.

The Veterinary School has a deficit of \$8,456.45. In 1899-1900 the deficit was \$4,206.96.

Gifts have been received during the year as follows:—

GIFTS TO FORM NEW FUNDS OR INCREASE OLD ONES.

From an anonymous giver, \$2,370.80 in cash, and securities valued at \$30,500, to be added to the George C. Shattuck Fund in the Medical School.

From the anonymous giver of the Fund for the Professorship of Hygiene, securities valued at \$15,680, to be added to that Fund.

For the Arnold Arboretum Fund, additional, from

Thomas Allen	\$500	Amount brought forward . .	\$4,350
Mrs. F. L. Ames	1,000	Wilder D. Bancroft	10
Oliver Ames	1,000	E. Pierson Beebe	1,000
C. W. Amory	1,000	A. S. Bigelow	500
Anonymous	500	Mrs. W. W. Blackmar	50
Anonymous	100	Mrs. Arthur W. Blake	1,000
Anonymous	250	William Brewster	5
Amount carried forward . .	\$4,350	Amount carried forward . .	\$6,915

Amount brought forward . . . \$6,915	Amount brought forward . . . \$37,240
Shepherd Brooks 1,000	Thomas W. Lawson 5,000
John C. Chaffin 500	Mrs. Henry Lee 1,000
F. W. Chapin 5	Joseph Lee 50
Philip A. Chase 250	Mrs. Elizabeth R. Lyman, Tr. 250
James Coates 500	Mrs. Henry A. Miles 10
Mr. and Mrs. James M. Codman 1,000	J. Pierpont Morgan 250
Miss Helen Collamore 200	Louis Morris 100
J. R. Coolidge 1,000	Mrs. David Nevins 100
Miss Sarah H. Crocker 100	Grenville H. Norcross 100
Henry P. Curtis 10	Edward E. Norton 5
F. Gordon Dexter 1,000	William J. Palmer 1,000
George Dexter 500	George Foster Peabody 500
Eben S. Draper 1,000	S. E. Peabody 1,000
H. C. Ernst 10	David Pingree 1,500
George F. Fabyan 1,000	James M. Prendergast 200
Miss Sarah B. Fay 5,000	Mrs. Sarah E. Potter 1,000
Desmond Fitzgerald 50	Thomas E. Proctor 500
Miss Cornelia A. French 1,000	Mrs. J. H. Robbins 10
Robert H. Gardiner 25	S. W. Rodman 25
Mrs. A. P. Gardner 100	Miss Marian Russell 200
George A. Gardner 2,000	Stephen Salisbury 100
John L. Gardner 1,000	James Schouler 25
Wendell P. Garrison 5	Frederick C. Shattuck 100
Mrs. W. H. Goodwin 250	Mrs. Howland Shaw 300
Mrs. G. G. Hammond 500	Mrs. Robert G. Shaw 100
Miss Ellen R. Hathaway 50	A. Shuman 100
Arthur Hunnewell 250	Mrs. Bayard Thayer 2,000
H. H. Hunnewell 5,000	Mrs. Ezra R. Thayer 25
Walter Hunnewell 1,000	John E. Thayer 3,000
Eben D. Jordan 5,000	Miss M. S. Walker 1,000
B. F. Keith 20	Henshaw B. Walley 5
Mrs. David P. Kimball 1,000	John D. Williams 500
Amount carried forward . . . \$37,240	\$57,295

From the estate of Lucius F. Billings, \$5,000, the income thereof to be used for scholarships "for the benefit of poor but deserving medical students in said Medical Department."

From the estate of Robert Charles Billings, \$7,500 additional, on account of his unrestricted bequest of \$100,000.

From Mrs. Arthur Blake, \$1,000, for establishing the F. B. Greenough Fund for Surgical Research.

For the Phillips Brooks House Endowment, from

Anonymous, through Edwin H. Abbot, Sec'y . . . \$10,000.00
Francis H. Johnson 500.00
Balance of subscriptions, through F. G. Peabody . . . 6.66
<u>\$10,506.66</u>

From members of the Class of 1868, \$1,275, to be added to the Free Bed Fund of the Class of 1868.

From the estate of Robert Henry Eddy, \$45,000, on account of his unrestricted residuary bequest.

From the estate of Calvin Ellis, \$5,000, the final payment on account of his bequest of \$50,000, the income thereof to be applied primarily towards the payment of certain expenses of such descendants of David Ellis and Beulah Newell, formerly of Dedham, and of John Ellis and Hannah Ellis, formerly of Walpole, as may be students in Harvard College; also \$48,488.39, the final payment of his residuary bequest, amounting to \$317,122.09, the income thereof to be used towards the increase of the salaries of certain professors in the Medical School to \$5,000 a year, and for other purposes in the Department of Medicine.

From the estate of Miss Lucy Ellis, in addition to previous receipts from her estate amounting to \$50,942.47 for the same purpose, real estate in the town of Eden, Bar Harbor, Me., valued at \$10,000, the income thereof to be used towards the increase of the salaries of certain professors in the Medical School to \$5,000 a year, and for other purposes in the Department of Medicine; also cash and securities amounting to \$48,401.47, the final payment of her residuary bequest amounting to \$108,801.47, the income thereof to be applied primarily towards the payment of certain expenses of such descendants of David Ellis and Beulah Newell, formerly of Dedham, and of John Ellis and Hannah Ellis, formerly of Walpole, as may be students in Harvard College.

From the estate of John Davis Williams French, his unrestricted bequest of \$5,000.

From Walter Hunnewell, \$5,000, in memory of Willard Peele Hunnewell, of the Class of 1904, to be used for the Museum of Comparative Zoölogy.

From Mr. and Mrs. Henry P. King, \$500, for establishing a Free Bed Fund for the Stillman Infirmary.

For the Henry Lee Professorship of History, or of some other branch of social science, additional, from

Elliot C. Lee	\$25,000
Mrs. Henry Lee	25,000
	<hr/>
	\$50,000

From the estate of Henry L. Pierce, \$5,000 additional, on account of his unrestricted residuary bequest.

From an anonymous giver, \$4,681.80 in cash and \$45,318.20 in securities, to establish a Fund to be used eventually for the advancement of astronomical science.

From Mr. and Mrs. Nelson Robinson, \$200,000, to be added to their previous gift of \$100,000, to establish, in memory of their son, the Nelson Robinson Jr. Endowment Fund, in the Department of Architecture.

From the estate of Henry Saltonstall, \$50,000, for establishing, as a memorial of his son, the Gurdon Saltonstall Fund, the income to be used "for the maintenance of instruction in the liberal arts, whether for undergraduates or graduates, or for the support of students, undergraduates or graduates, who may need assistance and who by their good conduct and success in study may deserve the same"; also \$6,000 to be added to the Saltonstall Scholarship Fund, and \$3,000 to be added to the Leverett Saltonstall Scholarship Fund.

From the estate of Mrs. Henry Saltonstall, \$10,000, to be added to the Gurdon Saltonstall Fund, which was established under the will of her husband.

From William A. Wadsworth and Herbert Wadsworth, \$25,000, to be added to the Edward Austin Fund for Scholars and Teachers, and \$1,500, to be added to the Edward Austin Fund for the Bacteriological Laboratory of the Medical School.

From the estate of Mrs. Mary Ann P. Weld, \$2,000 additional, the final payment on account of her bequest of \$10,000, for establishing the Christopher M. Weld Scholarship.

From two members of the Wilder family, \$25,000, their final payment towards a fund of \$40,000, which they offered to give for the purpose of establishing a professorship in the Medical School "to be known forever as the Charles Wilder Chair"; the department of medicine which this chair shall represent to be named from time to time by the Corporation.

From Henry P. Walcott, \$2,500, to establish a fund, "the income of which shall be used for the purpose of assisting such

sick students of the University as may be admitted to the Stillman Infirmary for treatment, and are not able to meet its necessary charges."

From the estate of David Ames Wells, \$1,335.21 in cash, and securities valued by the executor at \$76,816.90, on account of Mr. Wells's residuary bequest for establishing a prize and publication fund.

From the estate of Roger Wolcott, \$10,000, to be added to the J. Huntington Wolcott Fund, and \$10,000, to be added to the Huntington Frothingham Wolcott Fund. These Funds were established by Roger Wolcott in 1891 with a capital of \$10,000 each.

The total amount of these gifts for capital account is \$826,669.43, as is also stated on page 30 of this report.

GIFTS FOR IMMEDIATE USE.

From an anonymous giver, \$2,250, towards the payment of a salary in the College.

From anonymous givers, \$100, for the purchase of Norwegian photographs for the Department of Geology and Geography, in remembrance of Ole Bull.

From an anonymous giver, \$350, for the Ricardo Prize Scholarship for 1901-02.

From an anonymous giver, \$600, an unrestricted gift.

From an anonymous giver, \$304.10, for a microscope for the Department of the Medical School "devoted to the investigation of cancer under the trust fund created by the will of the late Caroline Croft."

From Edwin F. Atkins, \$2,500 additional, "for the study of the improvement of sugar-cane and other tropical plants."

From the Babcock-Wilcox Co., \$3,000, towards the cost of two boilers and a superheater for Pierce Hall.

From Mrs. C. M. Barnard, \$600, her eighteenth yearly payment for the Warren H. Cudworth Scholarships.

From F. P. Bonney, \$100, for the purchase of reference books for Professor Macvane's courses in government.

For the Botanic Garden, from

Anonymous	\$92.50
Anonymous	180.00
Anonymous	200.00
A. F. Estabrook	100.00
Henry Graves	100.00
C. G. Roebling	100.00
J. E. Rothwell	20.00
A. Shuman	10.00
	<u>\$802.50</u>

Through Francis G. Peabody, \$45.48, the unexpended balance of a gift for furnishing the Shepard Room in Phillips Brooks House, to be added to the income of the Phillips Brooks House Endowment.

From W. E. Byerly, \$57.11, towards the cost of publishing the Annals of Mathematics in 1899-1900.

For the purchase of apparatus, books, etc., for the Laboratory of Comparative Pathology, from

George F. Fabyan	\$250
Frederick C. Shattuck	250
	<u>\$500</u>

For the instruction and maintenance of certain Cuban Teachers during a course at the Summer School of 1900, from

Miss K. L. Bates	\$50.00
Mr. and Mrs. Joseph H. Beale, Jr. (additional)	25.00
F. A. Blackmer (additional)	100.00
Boston School Teachers (additional)	3.00
Charles J. Glidden	100.00
Walter E. Hayward	5.00
Arthur H. Nichols	50.00
R.	50.00
Mrs. Quincy A. Shaw	185.40
Ten Cuban Teachers	18.25
Undergraduates	307.96
	<u>\$894.61</u>

From Harold J. Coolidge, \$50, the first of five annual gifts of \$50 each, offered by him for the purchase of books on the Chinese question, for the College Library.

From Mrs. Henry Draper, of New York, an additional sum of \$9,999.96, to be expended by the Director of the Observatory in prosecuting the researches in the photography of stellar

spectra, with which the late Dr. Henry Draper's name is honorably associated.

From Charles W. Eliot, \$63.90, for the Laboratory of Comparative Pathology.

For the purchase of wax models for the Embryological Laboratory, illustrating the development of the human ear, from

Clarence J. Blake	\$15
Harris Kennedy	40
Charles S. Minot	15
	<u>\$70</u>

From Miss Kate Furbish, \$25, for the purchase of books for the Gray Herbarium Library.

For the purchase of a collection of portraits of David Garrick for the Library, as a memorial to the late Justin Winsor, from

Winthrop Ames	\$100	Amount brought forward . .	\$196
G. P. Baker	25	A. H. Newman	10
B. F. Bell	10	J. A. Noyes	10
Gordon Knox Bell	20	Arthur Pier	5
Gilman Collamore	10	Franklin H. Sargent	10
D. P. Griswold	10	Albert Stickney	10
J. H. Hyde	10	P. B. Thompson	5
A. D. Irving	1	E. J. Wendell	25
Edward King	10	J. Wendell, Jr.	10
Amount carried forward . . .	<u>\$196</u>		<u>\$281</u>

From the Department of Germanic Languages and Literatures, \$500, part of the proceeds of a performance of Lessing's "Minna von Barnhelm" given in Sanders Theatre, to be added to the gifts for collections for a Germanic Museum.

From Mrs. Asa Gray, \$25.29, for binding periodicals in the Library of the Gray Herbarium.

For the Gray Herbarium, from

Walter B. Adams	\$10	Amount brought forward . .	\$150
Miss Mary S. Ames	50	Francis S. Blake	10
Anonymous	5	William P. Blake	10
Anonymous	25	James C. Braman	5
Howard P. Arnold	25	Mrs. J. L. Bremer	25
Louis Arnold	5	Miss Sarah F. Bremer	15
Walter C. Baylies	10	Addison Brown	10
Thomas P. Beal	10	Edward I. Browne	10
A. C. Bent	10	Stephen Bullard	10
Amount carried forward . . .	<u>\$150</u>	Amount carried forward . . .	<u>\$245</u>

Amount brought forward . .	\$245	Amount brought forward . .	\$800
Mrs. William S. Bullard . . .	10	Walter Hunnewell	10
J. Elliot Cabot	10	Mrs. Susan M. Jackson . . .	10
James B. Case	10	William A. Jeffries	10
H. D. Chapin	10	Charles W. Jenks	10
Charles F. Choate	10	Bernard Jenney	10
Mrs. Eliot C. Clarke	10	Edward C. Johnson	10
Miss Helen Collamore	10	George G. Kennedy	625
John T. Coolidge	10	David P. Kimball	10
Mrs. C. A. Cummings	10	Mrs. David P. Kimball	10
Charles P. Curtis	10	Henry H. Kimball	10
Mrs. Charles P. Curtis	10	Lemuel C. Kimball, Jr. . . .	10
Henry P. Curtis	10	Mrs. H. M. Laughlin	10
Louis Curtis	10	George C. Lee	10
C. H. Dalton	10	J. R. Leeson	50
Samuel B. Dana	10	George V. Leverett	25
Edward S. Dodge	10	Mrs. George Linder	10
Mrs. Samuel Downer	10	Mrs. Mary E. Lodge	15
Mrs. J. W. Elliot	10	Augustus P. Loring	10
E. M. Farnsworth	10	Miss Katharine P. Loring . . .	10
J. S. Fay, Jr.	35	Miss Louisa P. Loring	10
Mrs. J. N. Fiske	10	William Caleb Loring	15
S. W. Fletcher	10	Mrs. T. K. Lothrop	10
Miss Amy Folsom	10	Arthur T. Lyman	10
Mrs. W. H. Forbes	15	Haslett McKim	20
Francis A. Foster	10	Miss E. F. Mason	10
Francis C. Foster	10	Albert Matthews	5
Mrs. Francis C. Foster	10	Mrs. Samuel T. Morse	10
A friend	5	William A. Munroe	10
A friend	20	Grenville H. Norcross	10
C. W. Galloupe	10	Mrs. Otis Norcross	10
Robert H. Gardiner	10	Peder Olsen	10
W. A. Gardner	10	Miss Emily L. Osgood	10
George A. Goddard	10	Miss E. S. Parkman	10
Reginald Gray	10	Frank E. Peabody	10
Mrs. Mary L. Greenleaf	25	F. H. Peabody	500
John Greenough	10	Miss Mary R. Peabody, trustee	10
Mrs. H. S. Grew	25	Mrs. J. C. Phillips	25
George W. Hammond	10	Henry Pickering	10
Mrs. George W. Hammond . . .	10	Mrs. Henry Pickering	10
Charles Head	10	Mrs. D. L. Pickman	10
Augustus Hemenway	10	David Pingree	10
J. P. B. Henshaw	10	Mrs. W. B. Potter	500
E. A. Hills	10	Miss Elizabeth C. Putnam . . .	10
Robert C. Hooper	20	George Putnam	50
Clement S. Houghton	10	Edward L. Rand	10
Miss Katharine Horsford . . .	10	Miss Sarah E. Read	20
Henry S. Howe	10	Mrs. W. H. Reed	10
Henry S. Hunnewell	10	George E. Richards	10
Amount carried forward . .	\$800	Amount carried forward . .	\$2,310

Amount brought forward . .	\$3,010	Amount brought forward . .	\$3,200
S. W. Rodman	10	C. W.	50
Mrs. W. B. Rogers	10	Miss Caroline E. Ward	10
Denman W. Ross	10	Mrs. S. D. Warren	10
Mrs. M. Denman Ross	10	Frank G. Webster	10
Mrs. Waldo O. Ross	10	Mrs. Frank G. Webster	10
J. E. Rothwell	10	Mrs. Charles W. Welch	10
Mrs. Robert S. Russell	10	George W. Weld	10
S. D. Sargeant	10	Mr. & Mrs. Walter Wesselhoeft	10
Mrs. Winthrop Sargent	10	George R. White	500
George O. Sears	10	S. B. Whiting	10
Francis Shaw	10	Mrs. Edward Whitney	30
Mrs. G. H. Shaw	20	Emile F. Williams	200
David N. Skillings	10	Edward S. Wood	10
Isaac Sprague	10	Mrs. Charlotte F. Woodman . .	10
Mrs. Isaac Sprague	10	Miss Mary Woodman	10
F. P. Sprague	10	Henry Woods	10
Charles H. Tweed	10	Charles L. Young	10
B. Vaughan	10		
Amount carried forward . .	\$3,200		\$4,110

From Mrs. Emil C. Hammer, in memory of her husband, formerly Danish Consul at Boston, \$500 additional, for the purchase of Scandinavian books.

From the Harvard Club of New York, \$2,500 additional, towards building the new boat-house.

From Francis L. Higginson, \$10,000, for the purchase and arrangement of a piece of land for summer work in connection with the Scientific School, and \$10,000 for uses in connection with the Harvard Union; any residue not required for those purposes to be used for furnishing Pierce Hall.

From James J. Higginson, \$200, for the purchase of land in New Hampshire for summer surveying.

From Samuel Hill, \$50, for the use of the Department of Political Economy in such manner as the Chairman may direct.

From an anonymous giver, \$250, for an additional course in History in 1900-01.

From the estate of John Holmes, \$13.77, the final payment on account of his bequest of \$300 for the benefit of poor students.

From Horatio A. Lamb, \$100, for the purchase of books *and music for the library* of the Division of Music.

For the purchase of books for the College Library, from

Archibald Cary Coolidge	\$3,764
Dante Society	25
Saturday Club of Boston	500
John Harvey Treat	300
	<u>\$4,589</u>

From James Loeb, \$100, for the purchase of publications of Labor Unions, and \$300 on account of the Charles Eliot Norton Fellowship for 1901-02.

For the purchase of books for the Lowell Memorial Library, from

M. L. Cate	\$2
A. R. Marsh	50
	<u>\$52</u>

From Theodore Lyman, \$500, to be used for any purpose connected with the Jefferson Physical Laboratory approved by Professor Trowbridge, and \$500 for improving the ventilation of room 41 therein, and for any other purpose connected with the Laboratory approved by Assistant Professor Sabine.

For the purchase of a collection of mammal skins for the Museum of Comparative Zoölogy, additional, from

Anonymous	\$620	Amount brought forward . .	\$1,520
William Brewster	100	D. L. Pickman	300
Louis Cabot	500	Francis Shaw	50
Arthur F. Estabrook	100	W. S. Spaulding	50
Charles F. Folsom (additional)	50	Mrs. Bayard Thayer	500
Henry S. Hunnewell	50	W. P. Wharton	200
A. Lawrence Lowell	100	Walter Woodman	100
Amount carried forward . .	\$1,520		<u>\$2,720</u>

From the Massachusetts Society for Promoting Agriculture, its fourth annual payment of \$2,500, "to be expended at the Arnold Arboretum by the Director, to increase the knowledge of Trees."

From the Division of Mathematics, \$15, for the purchase of books for that Department.

From A. H. Parker, \$50, for the purchase of books for the Francis James Child Memorial Library.

From Francis H. Peabody, \$100, "to enable the Gray Herbarium to have certain type specimens examined and sketched at the Royal Botanical Museum of Berlin."

For the Peabody Museum of American Archaeology and Ethnology, from

Mrs. N. E. Baylies	\$50
Clarence B. Moore	500
	<u>\$550</u>

From James J. Putnam and Moorfield Storey, trustees, \$500 towards a salary in the Medical School.

From Mr. and Mrs. Nelson Robinson, who have previously given, in memory of their son, Nelson Robinson, Jr., of the Class of 1900, \$115,000 for the erection of an Architecture Building and \$20,000 for the purchase of books, prints, casts, etc., \$30,000 additional for the Architecture Building.

From Jacob H. Schiff, \$10,000 additional, for "the erection of a building to house the Semitic collection," and \$10,000 for its furnishing.

From Charles Liebmann, James Loeb, Luther Mott, and Percy S. Straus, \$75, for a course of public lectures under the auspices of the Semitic Department.

Towards the salary of the Assistant Professor of Slavic Languages and Literatures for five years from September 1, 1901, from

J. R. Coolidge	\$5,000
Russell Gray	250
	<u>\$5,250</u>

From Theobald Smith, \$25, towards the expenses for research in the Laboratory of Comparative Pathology.

From the Society for Promoting Theological Education, \$3,704.05, for the library of the Divinity School.

For additions to The Soldier's Field, from

James J. Higginson	\$2,500
Mrs. James J. Higginson	2,500
	<u>\$5,000</u>

For the South End House Fellowship, from

Charles B. Barnes, Jr.	\$50	Amount brought forward . . .	\$300
Julian L. Coolidge	100	Edward W. Grew	100
William A. Dupee	100	Randolph C. Grew	100
George S. Fiske	50	James A. Lowell	100
Amount carried forward . . .	<u>\$300</u>		<u>\$600</u>

From Oscar F. Straus, \$100, for the benefit of needy students.

For the Surgical Laboratory, from

C. W. Amory	\$200
W. S. Bigelow	200
George Baty Blake	} 500
Francis Stanton Blake	
Lowell Blake	
	<u>\$900</u>

From Ezra R. Thayer, \$25, to be added to the gifts for collections for a Germanic Museum.

From an anonymous giver, \$500, for a Travelling Fellowship in Botany for 1900-01.

The total amount of these gifts for immediate use is \$129,497.77, as is also stated on page 28 of this report.

CHARLES F. ADAMS, 2D, *Treasurer.*

Boston, November 4, 1901

ACCOUNTS.

*General Statement of Receipts and Disbursements
for the year ending*

INCOME.

Interest on notes, mortgages, advances, &c.,	\$52,046.80	
Interest on Policies Mass. Hospital Life Insurance Co.,	849.00	
Interest on Bank Deposits.		
Deposit in New England Trust Co.,	\$68.03	
" " National Union Bank,	3,794.02	
" " Old Boston National Bank,	319.89	
" " Suffolk National Bank,	100.68	4,282.62
Interest on Public Funds (after deducting \$3,900.52 for sinking premiums).		
United States 4's,	\$13,265.08	
Massachusetts 3½'s,	1,339.40	
City of Boston 3½'s,	350.00	14,954.48
Interest on Sundry Bonds (after deducting \$3,425.58 for sinking premiums).		
American Bell Telephone Co. 4's,	\$10,163.71	
" Tel. and Tel. Co. 4's,	8,000.00	
Walter Baker & Co. Ltd. 4½'s,	10,800.00	
Broadway Realty Co. 5's,	3,527.62	
Brookline Gas Light Co. 5's,	250.00	
Chicago Edison Co. 5's,	111.11	
Chicago Junc. Railways & Union Stock Yards Co. 5's,	14,979.85	
Chicago Junc. Railways & Union Stock Yards Co. 4's,	3,811.11	
Girard Point Storage Co. 3½'s,	691.52	
Metropolitan Tel. & Tel. Co. 5's,	7,500.00	
New England Tel. and Tel. Co. 6's,	7,128.90	
" " " 5's,	4,058.82	76,021.64
Interest on Railroad Bonds (after deducting \$7,806.21 for sinking premiums).		
Baltimore & Ohio 4's,	\$4,000.00	
Baltimore & Ohio So. Western 3½'s,	3,500.00	
Bangor & Aroostook 5's (Van Buren extension),	4,767.50	
Burlington & Mo. River in Neb. 6's,	20,177.95	
Central Vermont 4's,	1,740.00	
Chicago, Burlington & Quincy 4's,	120.00	
Chicago, Burlington & Quincy 3½'s,	22,214.42	
Chicago & No. W., Madison Extension 7's,	5,310.09	
Chicago, Rock Island & Pacific 4's,	3,920.90	
Chicago Terminal Transfer 4's,	4,000.00	
Eastern 6's,	17,230.88	
Eastern sterling 6's,	5,736.68	
Fort Scott, So. E. & Memphis 7's,	5,390.00	
Indiana, Illinois & Iowa 4's,	1,666.67	
Kansas & Missouri 5's,	2,700.00	
Long Island 4's,	9,875.00	
Amounts carried forward,		\$112,350.09 \$154,154.54

*the Treasurer of Harvard College,
ly 31, 1901.*

EXPENSES.

ld to account of Expenses in the

University, as per Table I (page 55).

Salaries,	\$39,958.99	
Retiring Allowances,	9,527.62	
Sundry payments made from special Funds, .	7,463.60	
Other expenses,	44,875.28	
Deficit in the School of Veterinary Medicine for 1900-01,	8,456.45	
	<u>\$110,276.94</u>	
Less repayment to William Hayes Fogg Fund,	3,080.98	\$107,245.96

College, as per Table II (page 59).

Salaries for instruction,	\$366,234.99	
Sundry salaries,	14,950.00	
Repairs, insurance, and cleaning on College Buildings, not valued in Treasurer's books, .	49,687.66	
General expenses,	49,096.65	
Fellowships,	90,875.00	
Scholarships,	45,947.72	
Exhibitions,	22,575.94	
Prizes,	2,186.74	
Botanic Garden and Botanic Museum,	10,011.82	
Gray Herbarium,	7,763.23	
Hemenway Gymnasium,	9,896.18	
Jefferson Physical Laboratory,	2,802.08	
Appleton Chapel,	8,659.71	
Summer Schools,	17,644.18	
Books, from special Funds and gifts,	1,515.80	
Apparatus, &c., from special Funds and gifts, .	577.05	
Publication expenses, from special Funds and gifts,	3,528.66	
Sundry payments from special Funds and gifts, .	6,572.92	
Appropriations for collections and laboratories, .	<u>37,097.10</u>	676,572.88

Library, as per Table III (page 72).

Salaries,	\$15,220.83	
Services and wages,	17,738.44	
Books,	25,121.97	
Other expenses,	<u>9,566.62</u>	67,647.86

Divinity School, as per Table IV (page 75).

Salaries for instruction,	\$27,101.48	
Scholarships and Exhibitions,	1,522.88	
Other expenses,	<u>8,868.85</u>	37,493.21

Amount carried forward, \$888,959.91

*General Statement of Receipts and Disbursements
for the year ending*

INCOME (*continued*).

Amounts brought forward, . . .		\$112,350.09	\$154,154.54
Interest on Railroad Bonds (<i>continued</i>).			
Massachusetts Electric Co's. 4½'s,	2,250.00		
Metropolitan West Side Elevated 4's,	8,000.00		
Minneapolis Union 5's,	4,866.83		
New York Central & Hudson River 3½'s (L.S. & M.S. Coll.),	6,974.85		
New York Central & H. R. 3½'s (M. C. Coll.),	1,190.00		
New York, Ontario & Western 4's,	7,884.13		
Rutland 6's,	569.33		
Second Avenue 5's,	3,941.67		
Third Avenue 4's,	3,959.80		
Union Pacific 4's,	18,000.00	169,986.70	
Dividends on Sundry Stocks.			
American Surety Co.,	\$83.00		
First National Bank,	156.00		
General Electric Co.,	16.00		
Illinois & Miss. Telegraph Co.,	25.00		
Improved Dwelling House Association,	10.00		
Merchants National Bank,	51.00		
Old Boston " "	16.00		
Western Gas Co.,	48.00		
Western Union Telegraph Co.,	62.50	467.50	
Dividends on Manufacturing Stocks.			
Amoskeag Manufacturing Co.,	\$1,900.00		
Merrimack " "	561.00		
Pacific Mills,	2,400.00	4,161.00	
Dividends on Railroad Stocks.			
Boston & Albany,	\$994.50		
Boston Elevated,	144.00		
Boston & Lowell,	3,080.00		
Boston & Maine,	2,219.00		
Boston & Maine, preferred,	273.00		
Chicago, Burlington & Quincy,	12,748.50		
Fitchburg, preferred,	1,185.00		
Manhattan,	17.00		
New York Central & Hudson River,	11,615.00		
New York, New Haven & Hartford,	312.00		
Northern (N. H.),	1,740.00		
Northern Pacific, preferred,	15.00		
Old Colony,	2,695.00		
Pennsylvania,	6,000.00		
Rutland, preferred,	3,200.00		
West End Street, preferred,	238.00	46,476.00	
Amount carried forward,		\$375,245.74	

*of the Treasurer of Harvard College,
July 31, 1901.*

EXPENSES (*continued*).

Amount brought forward,		\$888,959.91
Law School, as per Table V (page 77).		
Salaries for instruction,	\$49,133.33	
Scholarships,	3,100.00	
Other expenses,	36,975.50	89,208.83
Medical School, as per Table VI (page 78).		
Salaries for instruction,	\$100,391.64	
Fees repaid to Instructors,	5,760.00	
Fellowships,	3,085.00	
Scholarships and Exhibitions,	4,637.98	
Prizes and expenses,	112.50	
Warren Anatomical Museum,	387.62	
Books, from special Funds and gifts,	1,848.06	
Sundry payments made from special Funds and gifts,	3,473.65	
Laboratory appropriations,	15,800.23	
Other expenses,	32,517.34	168,014.02
Dental School, as per Table VII (page 82).		
Salaries for instruction,	\$12,605.00	
Other expenses,	15,663.25	28,268.25
Museum of Comparative Zoölogy, as per Table VIII (page 83).		
Paid from sundry Funds on the order of the Faculty,	\$26,957.01	
Sturgis Hooper Fund, salary,	5,415.36	
Scholarship,	166.66	
Collection of Mammal skins,	5,012.65	37,551.68
Peabody Museum of American Archae- ology and Ethnology, as per Table IX (page 84).		
Peabody Professor Fund, Peabody Pro- fessor,	\$2,320.93	
Fellowships and Scholarship,	1,771.03	
Other expenses,	6,302.52	10,394.48
Observatory, as per Table X (page 85).		
Salaries,	\$18,500.00	
Other expenses,	39,070.07	57,570.07
Bussey Institution, as per table XI (page 86).		
Salaries for instruction,	\$6,950.00	
Other expenses,	11,008.72	17,958.72
Arnold Arboretum, as per Table XII (page 87).		
Salaries,	\$3,500.00	
Other expenses,	15,761.88	19,261.88
Amount carried forward,		\$1,312,187.79

*General Statement of Receipts and Disbursements
for the year ending*

INCOME (continued).

Amount brought forward,		\$375,245.74	
Dividends on Real Estate Trust Stocks.			
Barristers Hall Trust,	\$3,260.24		
Boston Real Estate Trust,	675.00		
Essex Street Trust,	3,000.00		
Paddock Building Trust,	4,693.63	11,628.87	
Real Estate Investments, from rents, &c., net receipts.			
Cambridge (University Houses and Lands).			
Gross receipts,	\$40,876.00		
Less Taxes,	\$4,089.80		
Insurance,	37.50		
Repairs, improvements, care, &c.,	21,611.03	25,738.33	\$15,138.27
Boston (general investments).			
Gross receipts,	\$189,794.70		
Less Taxes,	\$37,766.08		
Insurance,	3,579.19		
Repairs, improvements, care, &c.,	2,342.79	43,688.06	146,106.64
Bussey real estate.			
Gross receipts,	\$41,433.78		
Less Taxes,	\$9,061.94		
Insurance,	951.51		
Interest,	1,489.28		
Repairs, improvements, care, &c.,	5,020.73		
Heat and power,	5,120.75	21,644.21	19,789.52
Sundry estates (special investments).			
Gross receipts,	\$6,044.01		
Less Taxes,	\$1,253.66		
Repairs,	467.56		
Insurance,	260.04		
Advances repaid,	40.72	2,021.98	4,022.03
			185,056.46
Term Bills.			
College, as per Table II,	\$484,974.00		
Divinity School, as per Table IV,	7,012.13		
Law School, as per Table V,	95,525.00		
Medical School, as per Table VI,	122,328.63		
Dental School, as per Table VII,	20,000.45		
Bussey Institution, as per Table XI,	2,610.00		
School of Veterinary Medicine, as per Table XIII,	2,665.82	785,116.08	
Amount carried forward,		\$1,307,047.10	

*of the Treasurer of Harvard College,
July 31, 1901.*

EXPENSES (*continued*).

Amount brought forward,	\$1,312,187.79	
School of Veterinary Medicine, as per Table		
XIII (page 87).		
Salaries for instruction,	\$6,507.50	
Scholarships,	290.00	
Other expenses,	14,658.57	
	<u>\$21,451.07</u>	
Less deficit for 1900-01 assumed by the University,	8,456.45	12,994.62
Annuities from the following Funds.		
Anonymous,	\$300.00	
Bussey Trust,	4,000.00	
Caroline Brewer Croft,	2,048.05	
Gurney,	1,000.00	
Professorship of Hygiene,	2,000.00	
Alexander W. Thayer,	480.00	
Charles Wilder,	<u>256.50</u>	9,984.55
Class Funds.		
Paid the Secretary of the Class of 1853 ,		149.00
Grduary payments from income.		
Gifts for Cuban Teachers, expenses,	\$58,871.48	
“ the purchase of land in New Hampshire,	6,850.00	
Harvard Memorial Society Fund, services,	71.87	
John W. & Belinda L. Randall Fund,	200.00	
Daniel Williams Fund, for the benefit of the		
Herring Pond and Masphee Indians,	745.88	
Sarah Winslow Fund, to the Minister and		
Teacher at Tyngsborough, Mass.,	<u>212.70</u>	66,951.93
Construction Funds.		
Architecture Building,	\$109,175.71	
Brighton Marsh Fence,	29,627.63	
New Boat House,	25,414.61	
Pierce Hall,	138,409.56	
Semitic Building,	35,391.79	
John Simpkins Hall,	11,739.34	
Stillman Infirmary,	67,385.70	
University Museum,	<u>60,222.79</u>	477,867.18
Total amount of expenses, carried forward,		
		<u>\$1,879,635.02</u>

*General Statement of Receipts and Disbursements
for the year ending*

INCOME (continued).

Amount brought forward,	\$1,307,047.10	
Sundries.		
William Pennoyer Annuity,	\$117.63	
Asa Gray's copyrights,	1,261.69	
Matthews Scholarships (4 net rents of Hall), .	5,399.88	
Trustees of Edward Hopkins,	191.28	
Sale of grass, wood, old material, &c.,	3,838.19	
Sale of old examination papers,	425.78	
Sale of tickets to Commencement Dinner,	622.00	
Sale of tickets to Divinity School Alumni Dinner, .	53.00	
Sale of books, pamphlets, catalogues, &c.,	4,155.82	
Board of horses, cattle, &c., at Bussey Institution,	6,033.44	
Repayment of advances for microscopes,	1,707.30	
Repayment of part of cost of publishing Observa- tory annals,	2,140.26	
Sundry repayments,	803.55	
Laboratory instruction to Dental students at Medi- cal School,	4,100.00	
Laboratory instruction to Medical and Veterinary students at Dental School,	960.00	
Subscriptions to Veterinary Hospital,	20.00	
Use of Library by resident graduates and others, .	70.00	
Use of lockers in Hemenway Gymnasium,	3,668.50	
Use of Gymnasium by graduates,	30.00	
Use of Buildings (not Univ. Houses and Lands), .	5,160.00	
Fees for admission and condition examinations, .	2,993.00	
Fees in Infirmary, Dental School,	5,881.89	
Fees from Veterinary Hospital and Forge,	10,167.10	
Fees from Divinity Summer School,	1,335.00	
Laboratory fees,	23,466.65	
Fees for Summer Courses,	\$18,146.35	
Other receipts from Summer Courses,	400.00	18,546.35
Fees from Summer Camp, Engineering,	1,035.60	
Fees from Laboratory, Dental School,	2,176.55	
Fees for use of microscopes, Veterinary School, .	34.00	
Fines,	351.45	
Trustee of C. L. Hancock real estate,	348.81	
Loans to student's repaid,	1,573.54	108,668.36
Sundry Gifts for immediate use (see page 20),		129,497.77
Total amount of income,		\$1,545,213.13

RECEIPTS EXCLUSIVE OF INCOME.

GIFTS FOR CAPITAL ACCOUNT.

Edward Austin Fund (additional),	\$25,000.00	
Edward Austin Fund, Bact. Laboratory (additional),	1,500.00	
Amounts carried forward,	\$26,500.00	\$1,545,213.13

*of the Treasurer of Harvard College,
July 31, 1901.*

INVESTMENTS AND SUNDRY PAYMENTS.

Amount brought forward, \$1,879,635.02

GENERAL INVESTMENTS.

\$100,000 Baltimore & Ohio R. R. Conv. Deb. 4's of 1911 (70% of principal and full premium),	\$70,750.00	
100,000 Indiana, Illinois & Iowa R. R. 1st M. 4's of 1950,	96,500.00	
100,000 Long Island Railway Co. Unified M. 4's of 1949,	96,257.50	
100,000 Massachusetts Electric Companies 4½% Gold Coupon Notes of 1906,	98,000.00	
45,000 Broadway Realty Co. Purchase Money 1st M. 5's of 1926,	50,625.00	
100,000 Chicago Edison Co. 1st M. 5's of 1926,	107,260.00	
156 shares Chicago, Burlington & Quincy R. R.,	15,600.00	
667 " Pennsylvania R. R.,	40,025.04	
2,000 " Barristers Hall Trust (20%),	40,000.00	
1,750 " " " (10%),	17,500.00	
1,700 " " " " "	17,000.00	
1,313 shares Paddock Building Trust (10%),	13,130.00	
Gerrish Block, 47 to 59 Blackstone St. and 72 to 76 North St., Boston,	192,875.75	
Estate, Washington St., North, Boston, Improvements,	8,347.87	
Baring Bros. & Co. in account,	\$196.52	
Less expenses,	2.18	194.34
Accrued interest and expenses on bonds bought,	4,122.22	
Advances to Rotch Laboratory,	6,637.62	
" " Harvard Dining Association,	21.16	
" " Randall Hall Association,	11,155.56	
Notes of manufacturing companies, &c.,	\$780,000.00	
Less notes paid,	710,000.00	70,000.00
		<u>956,002.06</u>

SPECIAL INVESTMENTS.

Estate No. 3 Divinity Avenue, Cambridge (University Houses and Lands Account),	\$13,158.50	
Real Estate in Chelsea. Legal Expenses (C. L. Han- cock Fund),	10.00	
14 shares Chicago, Burlington & Quincy R. R. (Price Greenleaf Fund),	1,400.00	
16 shares American Light & Traction Co., preferred, received in part payment for 16 shares Western Gas Co. exchanged (David Ames Weld Fund),	1,520.00	
4½ shares American Light & Traction Co., received in part payment for 16 shares Western Gas Co. ex- changed (David Ames Weld Fund),	80.00	
100 shares Paddock Building Trust (10%) (Price Greenleaf Fund),	1,000.00	17,168.50
Amount carried forward,		<u>\$2,852,805.58</u>

*General Statement of Receipts and Disbursements
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (continued).

Amounts brought forward, \$26,500.00 \$1,545,213.13

GIFTS FOR CAPITAL ACCOUNT (continued).

Arnold Arboretum Fund (additional),	\$57,295.00	
Lucius F. Billings Fund,	5,000.00	
Robert Charles Billings Fund (additional), . . .	7,500.00	
F. B. Greenough Fund for Surgical Research, . .	1,000.00	
Phillips Brooks House Endowment,	10,506.66	
Free Bed Fund of the Class of 1868 (additional), .	1,275.00	
Robert Henry Eddy Fund,	45,000.00	
Calvin Ellis Fund (additional),	48,488.39	
Calvin and Lucy Ellis Aid Fund (additional), . .	53,401.47	
Lucy Ellis Fund (additional),	10,000.00	
John Davis Williams French Fund,	5,000.00	
Fund for the Advancement of Astronomical Science .	50,000.00	
Willard Peele Hunnewell Fund,	5,000.00	
Free Bed Fund for the Stillman Infirmary,	500.00	
Henry Lee Professorship Fund (additional), . . .	50,000.00	
Henry L. Pierce Residuary Bequest (additional), .	5,000.00	
Nelson Robinson Jr. Endowment Fund (additional),	200,000.00	
Professorship of Hygiene Fund (additional),	15,680.00	
Gurdon Saltonstall Fund,	60,000.00	
Saltonstall Scholarship Fund (additional),	6,000.00	
Leverett Saltonstall Scholarship Fund (additional),	3,000.00	
George C. Shattuck Fund (additional),	32,870.80	
Christopher M. Weld Scholarship Fund (additional),	2,000.00	
Charles Wilder Professorship Fund (additional), .	25,000.00	
Henry P. Wolcott Fund,	2,500.00	
David Ames Wells Fund,	78,152.11	
Huntington Frothingham Wolcott Fund (addi- tional),	10,000.00	
J. Huntington Wolcott Fund (additional), . . .	10,000.00	826,669.43

SALES, ETC., GENERAL INVESTMENTS.

\$56,000 Walter Baker & Co. Limited 4½'s, called and paid off at par,	\$56,000.00
35,000 Burl. & Mo. River (Neb.) R. R. non. ex. 6's, called and paid off at par,	35,000.00
100,000 Eastern R. R. 1st M. 6's of 1906,	114,250.00
14,000 Fort Scott, South Eastern & Memphis R. R. 1st M. 7's, called and paid off at 105, . . .	14,700.00
2 Rights Chicago, Burlington & Quincy R. R., . .	8.15
250 shares Barristers Hall Trust (80% paid), . .	22,000.00
50 " " " " (90% paid), . .	4,850.00

Amounts carried forward, \$246,808.15 \$2,371,863.56

*of the Treasurer of Harvard College,
July 31, 1901.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, \$2,852,805.58

SPECIAL INVESTMENTS (*continued*).

Property received on account of the bequests of Miss
Lucy Ellis.

\$2,000 Atchison, Topeka & Santa Fe Railway Gen. M. 4's of 1995,	2,065.00	
2,000 Atchison, Topeka & Santa Fe Railway Adjust- ment 4's of 1995,	1,805.00	
2,000 Chicago & Eastern Illinois R. R. Cons. M. 5's of 1937,	2,346.25	
2,000 Central Vermont R'y 1st M. 4's of 1920, . .	1,804.78	
4,000 Little Rock & Fort Smith R'y 1st M. 7's of 1905,	4,258.78	
3,000 Erie Telegraph & Telephone Co. Coll. Tr. 5's of 1926,	3,094.59	
2,000 Somerset Trust 2d M. 6's of 1902,	2,079.33	
1 share Central Vermont R'y,	7.73	
41 shares Chicago, Burlington & Quincy R. R., .	5,862.18	
50 " Chicago, St. Paul, Minneapolis & Omaha R'y, preferred,	8,991.50	
71 " Fitchburg R. R., preferred,	10,027.20	
12 " Chicago Junction R'ys & Union Stock Yards Co.,	1,734.60	
5 " E. & T. Fairbanks & Co.,	1,498.00	
10 " Improved Dwelling House Association, . .	400.00	
11 " Massachusetts Cremation Society, . .		
Real Estate in the town of Eden, Bar Harbor, Me., about 9 acres,	10,000.00	55,974.94

Property received on account of the bequest of **David
Ames Wells.**

\$4,000 Adams Express Co. Deb. 4's of 1948,	\$4,200.00
2,000 Buffalo City Gas Co. 1st M. 5's of 1947, . . .	1,500.00
1,000 The Electric Corporation 7's of 1992,	1,000.00
50 shares Cleveland & Pittsburg R. R.,	4,750.00
20 " Illinois Central R. R.,	2,800.00
17 " Manhattan R'y,	2,159.00
15 " Northern Pacific R'y, preferred,	1,455.00
21 " Pennsylvania R. R.,	1,556.00
40 " Pittsburg, Fort Wayne & Chicago R'y,	7,600.00
20 " West Virginia Central & Pittsburg R'y, . . .	1,600.00
33 " Pullman Co.,	7,029.00
40 " Adams Express Co.,	6,560.00
25 " Illinois & Miss. Telegraph Co.,	875.00

Amounts carried forward, \$43,084.00 \$2,908,780.52

*General Statement of Receipts and Disbursement
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (continued).

Amounts brought forward, . . . \$246,808.15 \$2,371,882.54

SALES, ETC., GENERAL INVESTMENTS (continued).

585 shares Barristers Hall Trust (full paid), . . .	62,581.30	
687 " Paddock Building Trust (55% paid), . . .	41,305.76	
120 " " " " (65% paid), . . .	8,397.60	358,992.81

SALES, ETC., SPECIAL INVESTMENTS.

Sale of Price Greenleaf Investments.

317 rights Boston & Maine R. R.,	\$22.21	
7 " Chicago, Burlington & Quincy R. R., . .	29.65	
\$1,000 Burlington & Missouri River (Neb.) R. R. non ex. 6's, called and paid off at par,	1,000.00	1,061.86

Sale of property received from the estate of Henry C. Warren.

84 shares Boston & Albany R. R.,	\$21,407.26	
64 " Boston Elevated R'y,	9,948.38	
200 " West End St. R'y, preferred,	22,715.36	
39 " First National Bank,	6,814.22	60,885.22

Sale of property received from the estate of Calvin Ellis.

150 shares Boston & Albany R. R.,	\$38,225.72	
50 " Boston & Lowell R. R.,	12,142.75	
91 " Boston & Maine R. R., preferred, . . .	15,464.55	
156 " New York, New Haven & Hartford R.R., .	32,945.46	
120 " Old Colony R. R.,	24,215.68	
17 " Merchants National Bank,	2,783.16	
8 " Old Boston National Bank,	797.59	
200 rights Chicago, Burlington & Quincy R. R., .	815.00	127,387.91

Sale of property received from the estate of Miss Lucy Ellis.

\$2,000 Atchison, Topeka & Santa Fe R'y Gen. M. 4's. of 1995,	\$2,065.00	
2,000 Atchison, Topeka & Santa Fe R'y Adj. 4's of 1995,	1,805.00	
2,000 Chicago & Eastern Illinois R. R. Cons. M. 5's of 1937,	2,346.25	
2,000 Central Vermont R'y 1st M. 4's of 1920, . .	1,804.78	
4,000 Little Rock & F't Smith R'y 1st M. 7's of 1905,	4,258.78	
3,000 Erie Telegraph & Telephone Co., Coll. Tr. 5's of 1926,	3,094.59	
2,000 Somerset Trust 2d M. 6's of 1902,	2,079.33	
1 share Central Vermont R'y,	7.73	
41 shares Chicago, Burlington & Quincy R. R., .	5,862.18	

Amounts carried forward, \$23,323.64 \$2,920,200.86

of the Treasurer of Harvard College,
July 31, 1901.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amounts brought forward, \$48,084.00 \$2,908,780.53

SPECIAL INVESTMENTS (*continued*).

Property received on account of the bequest of David
Ames Wells (*continued*).

25 shares Northwestern Telegraph Co.,	1,525.00	
50 " Western Union Telegraph Co.,	4,650.00	
10 " The Electric Corporation, . . . . .	.40	
8 " General Electric Co.,	1,816.00	
8 " Buffalo City Gas Co.,	64.00	
16 " Western Gas Co.,	1,600.00	
88 " American Surety Co.,	7,677.50	
10 " Morton Trust Co.,	7,250.00	
10 " New York Security & Trust Co.,	8,000.00	
11 " Walter A. Wood M. & R. Machine Co.,	550.00	
1 share New York Evening Post Publishing Co.,	600.00	76,816.90

Property received for the Fund for the Advancement
of Astronomical Science.

25 shares Boston & Albany R. R.,	\$6,368.25	
11 " Boston & Maine R. R.,	2,181.03	
17 " Boston & Providence R. R.,	5,095.41	
11 " Connecticut River R. R.,	3,111.03	
10 " New York, New Haven & Hartford R. R.,	2,154.80	
25 " Norwich & Worcester R. R.,	5,743.25	
30 " Massachusetts Electric Companies, pre- ferred,	2,781.90	
20 " West End St. R'y,	1,934.80	
15 " American Telephone & Telegraph Co.,	2,576.33	
17 " Calumet & Hecla Mining Co.,	13,421.40	45,818.20

Property received for the Professorship of Hygiene
Fund from its anonymous founder.

80 shares Chicago, Burlington & Quincy R. R.,	\$15,680.00	
Cost of transfer of same,	1.85	15,681.85

Property received for the George C. Shattuck Fund from
an anonymous giver.

25,000 Kansas City, Fort Scott & Memphis R. R. Cons. M. 6's of 1928,		80,500.00
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.80 Beacon St., taxes and other expenses,	510.66	
Woodland Hill Estate, taxes and legal expenses,	1,080.11	

Amount carried forward, \$3,078,688.24

*General Statement of Receipts and Disbursements
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (continued).

Amounts brought forward, \$23,323.64 \$2,920,200.36

SALES, ETC., SPECIAL INVESTMENTS (continued).

Sale of property received from the estate of Miss Lucy Ellis (continued).

50 shares Chicago, St. Paul, Minneapolis & Omaha R'y, preferred,	8,991.50		
71 " Fitchburg R. R., preferred,	10,027.20		
12 " Chicago Junction R'y's & Union Stock Yards Co.,	1,734.60		
5 " E. & T. Fairbanks & Co.,	1,498.00		
10 " Improved Dwelling House Association,	400.00		
Estate 480 Beacon St., Boston,	\$35,000.00		
Less Broker's commission and legal expenses,	376.25	34,623.75	80,598.69

Sale of property received for the Fund for the Advancement of Astronomical Science.

15 shares American Telephone & Telegraph Co.,	\$2,335.95		
15 rights American Telephone & Telegraph Co.,	240.38		
25 shares Boston & Albany R. R.,	6,868.25		
11 " Boston & Maine R. R.,	2,131.03		
17 " Boston & Providence R. R.,	5,095.41		
17 " Calumet & Hecla Mining Co.,	13,421.40		
10 " Connecticut River R. R.,	3,111.03		
25 " Norwich & Worcester R. R.,	5,743.25	38,446.70	

Part of note held for **James Barr Ames Fund**, paid, 100.00

16 shares Western Gas Co. (David Ames Wells Fund) exchanged for

16 shares American Light & Traction Co., pref.,	\$1,520.00		
4 $\frac{1}{8}$ shares American Light & Traction Co.,	80.00	1,600.00	

Sale of $\frac{1}{10}$ share American Light & Traction Co. (David Ames Wells Fund), 20.00

SUNDRIES.

Harvard Dining Association, to reduce debt,	\$1,500.00		
Randall Hall Association, to reduce debt,	600.00		
Premiums on Bonds, repaid in part,	13,132.31		
Advances for accrued interest and expenses on bonds, repaid,	4,547.22		
Advances to Calvin and Lucy Ellis real estate , repaid in part,	40.72		
Special deposit, to be repaid,	318.20		
Sundry repayments,	2,030.84	23,169.39	
Amount carried forward,		\$3,063,135.04	

*of the Treasurer of Harvard College,
July 31, 1901.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, \$8,078,688.24

Amount carried forward, \$8,078,688.24

*General Statement of Receipts and Disbursements
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (continued).

Amount brought forward, \$3,063,135.04

Bursar's Sundry Accounts.

Receipts during the year, 526,790.22

Balance, August 1, 1900.

Cash in Suffolk National Bank, \$9,526.65

“ National Union Bank, 157,002.63

“ Old Boston National Bank, 69,748.60

“ New England Trust Co., 3,615.26

“ hands of Charles F. Mason, Bursar, . . . 16,980.44

Term Bills due in October, 1900, 229,150.09

“ “ overdue, 8,823.89 494,847.56

Total, \$4,084,772.82

*of the Treasurer of Harvard College,
July 31, 1901.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, \$3,078,688.24

Bursar's Sundry Accounts.

Payments during the year.

On account of Harvard Dining Association, . .	\$185,959.25	
“ “ Randall Hall Association, . . .	78,378.75	
On sundry accounts,	<u>251,634.90</u>	515,972.90

Balance, July 31, 1901.

Cash in Suffolk National Bank,	\$26,480.66	
“ National Union Bank,	185,570.67	
“ New England Trust Co.,	3,228.32	
“ hands of Charles F. Mason, Bursar, . . .	29,035.72	
Term Bills due in October, 1901,	<u>236,731.03</u>	
“ “ overdue,	9,065.28	490,111.68
Total,		\$4,084,772.82

The following Account exhibits the State of the Property, as entered upon the Treasurer's Books, July 31, 1901.

Separate Investments, as stated in detail on pages 3,

4, 5 and 6 of this report, consisting of

Railroad Bonds,	\$236,095.06	
Sundry Bonds,	354,873.80	
Railroad Stocks,	336,551.45	
Sundry Stocks,	75,380.65	
University Houses and Lands,	500,321.34	
Other Real Estate,	499,641.08	
Sundries,	28,469.44	
Cash in New England Trust Co.,	8,228.32	\$2,034,561.14

And "General Investments," as follows:—

Mortgages and Notes.

Mortgages,	\$233,000.00	
Boott Cotton Mills' Note,	100,000.00	
Cocheco Manufacturing Co.'s Notes,	150,000.00	
Edison Electric Illuminating Co.'s Note,	50,000.00	
Manchester Mills' Note,	100,000.00	
Massachusetts Cotton Mills' Notes,	100,000.00	
Merrimack Manufacturing Co.'s Notes,	100,000.00	
Tremont & Suffolk Mills' Note,	50,000.00	
Pacific Mills' Note,	100,000.00	983,000.00

***United States Bonds.**

400,000 United States 4's of 1925,	464,955.88
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Railroad Bonds.

\$100,000 Baltimore & Ohio 4's of 1948,	\$96,625.00	
100,000 Baltimore & Ohio Conv. Deb. 4's of 1911 (70% of principal and full premium paid),	70,750.00	
100,000 Baltimore & Ohio (S. W. Division) 1st M. 3½'s of 1925,	89,750.00	
100,000 Bangor & Aroostook (Van Buren Extension) 1st M. 5's of 1943,	109,651.26	
330,200 Burl. & Mo. R. in Nebr. non ex. 6's,	338,715.19	
644,000 Chic., Burl. & Quincy 3½'s of 1949,	662,987.84	
100,000 Chic. & No. W. (Madison Extension) 1st M. 7's of 1911,	116,899.02	
100,000 Chicago, Rock Island & Pacific 4's of 1988,	106,842.08	
100,000 Chicago Terminal Transfer 1st M. 4's of 1947,	95,772.50	

Amounts carried forward, . . . \$1,687,992.89 \$3,482,517.02

* These \$400,000 of United States 4's of 1925 have, from Dec. 22, 1899, been lent to the National Shawmut Bank, which pays to the College, for the use, interest at the rate of two per cent. a year, in addition to the interest of four per cent. received by the bank from the bonds, thus making the income of the College from the bonds equal to six per cent. upon their par value.

Amounts brought forward, . . . \$1,687,992.89 **\$3,482,517.02**
Railroad Bonds (continued).

\$243,000 Eastern, 1st M. 6's of 1906,	252,232.67	
£19,600 Eastern " " Sterling of 1906,	95,483.40	
\$70,000 Fort Scott. So. E. & Mem., 1st M. 7's,	69,608.69	
100,000 Indiana, Ill. & Iowa 1st M. 4's of 1950,	96,500.00	
300,000 Long Island Unified M. 4's of 1949,	283,257.50	
100,000 Massachusetts Electric Companies 4½% Gold Coupon Notes of 1906,	98,000.00	
200,000 Metrop. West Side Elevated 4's of 1938,	192,746.25	
100,000 Minneapolis Union 1st M. 5's of 1922,	102,796.49	
200,000 New York Central & H. R. (L. S. & M. S. Coll.) 3½'s of 1998,	202,439.55	
200,000 New York, Ontario & Western Ref. M. 4's of 1992,	210,543.93	
100,000 Second Ave. (N. Y.) Con. M. 5's of 1948,	118,552.78	
100,000 Third Avenue (N. Y.) 1st Consol. M. 4's of 2000,	103,959.80	
400,000 Union Pacific 1st M. & L. G. 4's of 1947,	<u>353,114.75</u>	3,867,228.70

Sundry Bonds.

\$200,000 American Bell Tel. Co. 4's of 1908,	\$203,558.32	
200,000 American Tel. & Tel. Co. 4's of 1929,	196,000.00	
184,000 Walter Baker & Co. Ltd. 4½'s of 1903,	184,000.00	
145,000 Broadway Realty Co. Purchase money 1st M. 5's of 1926,	157,335.52	
100,000 Chicago Edison Co. 1st M. 5's of 1926,	107,260.00	
250,000 Chicago Junction Railways and Union Stock Yards Coll. Trust 5's of 1915,	250,282.05	
100,000 Chicago Junction Railways and Union Stock Yards 4's of 1940,	98,500.00	
100,000 Metrop. Tel. & Tel. Co. 1st M. 5's of 1918,	99,500.00	
100,000 New England Tel. & Tel. Co. 6's of 1906,	101,484.36	
100,000 New England Tel. & Tel. Co. 5's of 1916,	<u>114,117.64</u>	1,512,037.89

Railroad Stocks.

1718 shares Chicago, Burl. & Quincy R. R.,	\$164,910.92	
2303 " N. Y. Central & Hud. River R. R.,	234,987.50	
2667 " Pennsylvania R. R.,	<u>169,100.04</u>	568,998.46

Manufacturing Stocks.

12 shares Amoskeag Manufacturing Co.,	\$3,654.00	
187 " Merrimack " "	18,700.00	
24 " Pacific Mills,	<u>16,668.29</u>	39,022.29

Real Estate Trust Stocks.

1000 shares Essex Street Trust,	\$100,000.00	
1115 " Barristers Hall Trust,	105,068.70	
1193 " Paddock Building Trust (65% paid),	<u>73,526.64</u>	278,595.34

Amount carried forward, **\$9,748,399.70**

Amount brought forward, \$9,748,399.70

Real Estate.

Adams Estate, Washington Street, Boston, . . .	\$250,000.00	
Amory Estate, Franklin Street, Boston,	165,615.81	
Estate in Washington Street, North, Boston, . .	58,913.52	
Gerrish Block, Blackstone and North Streets, Boston,	192,875.75	
Gray Estate, Washington Street, Boston,	834,231.77	
Hayward Estate, Washington Street, Boston, . .	578,361.88	
Lowell Estate, Washington Street, Boston, . . .	464,368.91	
Townsend Estate, Hawkins Street, Boston, . . .	44,569.49	
Webb Estate, Washington Street, Boston, . . .	164,604.79	
Reversion of Buildings in Brattle Street, Boston.	1,015.00	2,754,556.92

Sundries.

Advances to Bussey Trust,	\$29,785.51	
“ “ School of Veterinary Medicine, . . .	24,406.01	
“ “ Peabody Museum of American Archaeology and Ethnology,	1,607.30	
“ “ Botanic Department,	18,625.67	
“ “ Dining Hall Association,	12,522.66	
“ “ Randall Hall Association,	33,431.37	
“ “ Rotch Laboratory,	6,687.62	
	\$127,016.04	
Baring Brothers & Co.,	2,682.59	
Term bills due in October, 1901,	236,731.08	
“ “ overdue,	9,065.28	375,494.91

Cash in Suffolk National Bank,	\$26,480.66	
“ “ National Union Bank,	185,570.67	
“ “ hands of Charles F. Mason, Bursar, . . .	29,085.72	241,087.05
Total,		\$18,119,538.61

The foregoing Property represents the following Funds and Balances, and is answerable for the same.*

Principal, Aug. 1, 1900.	UNIVERSITY FUNDS.	Principal, July 31, 1901.
\$4,950.00	Andrew Bigelow (1898),	\$4,950.00
85,000.00	Robert C. Billings (1900), . . .	92,500.00
5,000.00	Stanton Blake (1899)	5,000.00
4,771.33	Charlotte F. Blanchard (1891), .	4,771.33
5,250.00	Samuel D. Bradford 1866), . .	5,250.00
12,500.00	John W. Carter (1898),	12,500.00
154.54	Thomas Cotton (1727),	154.76
22,000.00	John Cowdin (1888),	22,000.00
115,966.56	George B. Dorr (1882),	115,966.56
48,458.50	George Draper (1892),	48,458.50
	R. H. Eddy 1901),	45,000.00
101,225.49	Harvard Ellis (1895),	101,225.49
	John Davis Williams French (1901),	5,078.35
20,571.18	Gore (1834),	20,571.18
25,000.00	John C. Gray (1881),	25,000.00
20,000.00	Walter Hastings (1888),	20,000.00
5,000.00	George Baxter Hyde (1895), . .	5,000.00
129,940.39	Insurance and Guaranty (1860), . .	132,288.30
16,871.63	Leonard Jarvis (1859)	16,871.63
10,000.00	Henry P. Kidder (1894),	10,000.00
10,000.00	Joseph Lee (1802),	10,000.00
10,000.00	Theodore Lyman (1898),	10,000.00
81,950.54	Henry T. Morgan (1883),	81,950.54
15,750.00	Israel Munson (1844),	15,750.00
113,817.44	Francis E. Parker (1886),	113,817.44
30,000.00	William Perkins (1888),	30,000.00
51,686.17	Henry L. Pierce (1898),	51,000.71
570,000.00	Henry L. Pierce (Residuary) (1898),	
	Total received, . . . \$750,000.00	
	Appropriated for build-	
	ing Pierce Hall , . . 202,100.00	547,900.00
63,515.48	President's (1883)	63,603.76
354,056.53	Retiring Allowance (1879),	361,169.59
23,370.08	John L. Russell (1889),	23,370.08
46,913.13	Isaac Sweetser (1894),	46,913.13
5,000.00	Seth Turner 1883),	5,000.00
100,000.00	William F. Weld (1893),	100,000.00
\$2,108,718.94	. . . Amounts carried forward,	\$2,153,061.80

* The Funds and Balances have been re-classified and the dates of the establishment of the Funds have been printed after their titles.

Principal,
Aug. 1, 1900.

Principal, July 31, 1901.

\$2,108,718.94	. . Amounts brought forward,	\$2,153,061.30
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* COLLEGE FUNDS.

8,151.81	John W. P. Abbot (1874), . . .	\$8,534.95
27,748.64	Alford Professorship (1765), . . .	27,748.64
6,230.00	Daniel Austin 1879),	6,230.00
1,050.00	John A. Blanchard 1873), . .	1,050.00
39,780.00	Botanic Department 1867), . . .	39,780.00
28,337.40	Boylston Professorship (1772), . .	28,337.40
11,074.65	Francis James Child Mem.(1897),	11,161.27
6,584.16	Classical Publ. F'd of Class of 1856, (1888),	6,026.13
150,297.54	Class Subscription (1870),	150,297.54
3,285.78	Paul Dudley (1751),	3,840.22
21,619.50	Eliot Professorship (1814),	21,619.50
10,000.00	Eliot " (Jon. Phillips' gift)(1854),	10,000.00
3,500.01	Erving Professorship (1791),	3,500.01
35,990.99	Fisher " (1834),	35,990.99
359.10	Henry Flynt (1760),	375.97
16,240.38	Fund for Permanent Tutors (1796), .	16,240.38
1,033.57	Fund for Religious Services (1887), .	1,033.57
6,034.41	Gospel Church (1868),	6,176.21
	Gray Herbarium (balance),	345.37
32,511.00	Asa Gray Memorial (1898), . . .	32,511.00
21,569.43	Asa Gray Professorship of Syste- matic Botany (1897),	21,599.46
194,561.54	Gurney 1888	194,455.95
15,000.00	Harvard Oriental Series (1899), . .	15,113.53
20,655.91	Herbarium (1865),	20,655.91
20,217.08	Hersey Professorship (1772), . . .	20,217.08
21,744.18	Hersey Professorship (Thomas Lee's gift 1856),	21,744.18
34,517.60	Hollis Professorship of Divinity (1726),	34,517.60
3,747.33	Hollis " of Mathematics (1713),	3,747.33
5,386.20	Ingersoll Lecture 1894	5,453.37
1,846.08	Jefferson Physical Lab'y (balance),	3,155.81
9,464.01	Lectures on Political Economy (1889),	9,608.82
15,796.97	Lee Fund for Reading 863), . . .	15,796.97
50,617.47	Henry Lee Professorship (1900), .	104,416.29
8,330.37	Joseph Lovering (1891),	8,043.01
66,382.31	Lowell Fund for a Botanic Garden (1882), (formerly Professorship of Natural History , 1805),	66,382.31
43,062.93	McLean Professorship (1834), . .	43,062.93
20,834.37	William B. Noble Lectures (1898),	21,232.69
\$3,072,281.66	. . Amounts carried forward, . . .	\$1,019,502.39 \$2,153,061.3

* Including some actually used in the Graduate School.

Principal, Aug. 1, 1900.		Principal, July 31, 1901.
1,072,281.66	Amounts brought forward, . . .	\$1,019,502.39 \$2,153,061.80
13,930.66	Daniel H. Peirce (1876), . . .	13,936.14
21,000.00	Perkins Professorship (1841), . .	21,000.00
31,500.00	Jonathan Phillips (186) . . .	31,500.00
75,000.00	Physical Laboratory Endowm't(1881),	75,000.00
25,020.19	Plummer Professorship (1854), . .	25,020.19
52,500.00	Pope " (1868), . .	52,500.00
164,731.35	Professorship of Hygiene (1899), . .	185,118.71
100,000.00	Nelson Robinson, Jr 1899), .	300,000.00
56,441.25	Rumford Professorship (1819), . .	56,441.25
2,000.00	John L. Russell (1889), . . .	2,000.00
	Gurdon Saltonstall (1901 , . .	60,000.00
4,336.65	George William Sawin (1890),	4,353.73
1,925.66	Schol. & Benef. money returned (bal.),	1,418.92
23,139.83	Smith Professorship (1816), . . .	23,139.83
12,811.14	Josiah Stickney (1899), . . .	12,811.14
16,107.30	John E. Thayer (1885), . . .	16,308.12
1,177.02	Elizabeth Torrey 1896), . . .	1,232.34
10,000.00	Henry Warren Torrey (1890), .	10,697.53
101,385.25	Unknown Memorial (1898), . . .	101,793.41
16,031.33	Samuel Ward (1680) . . .	16,784.74
6,322.34	Cyrus M. Warren (1893), . . .	6,487.75
113,978.61	Henry C. Warren (1890), . . .	117,873.44
50,000.00	Increase S. Wheeler 1889), . .	50,900.00
976.93	Chauncey Wright 1884), . .	994.63
	Gifts for land in New Hampshire(bal.),	3,408.15
523.25	" Classical Library (balance),	448.06
159.72	" Historical " "	
	" Sugar-cane investigation, etc.	
	(balance),	1,545.93
2,490.46	" cases, etc., at Botanic Gar-	
	den (balance) . . .	1,989.86
3,663.20	" Sanskrit Department (bal.),	2,571.13
19,185.27	" Semitic Collection (balance),	20,048.42
1,587.87	" " Library, "	1,531.11
2,659.48	" Collections for a Germanic	
	Museum (balance) . . .	3,241.62
20,116.88	" Books, Prints, Casts, etc.,	
	for Dept. of Architec. (bal.),	18,376.39
250.00	" Physical Research "	76.15
100.00	" Music 7 "	12.20
950.00	" Salaries "	5,329.36
1,668.51	Sundry Gifts (unexpended balances),	1,734.49
FELLOWSHIP FUNDS.		
10,580.41	Ozias Goodwin Memorial (1889),	11,077.67
10,809.52	Harris (1868),	10,817.59
10,808.97	John Thornton Kirkland (1871),	10,641.99
1,058,050.61	Amounts carried forward, . . .	\$2,298,819.38 \$2,153,061.80

Principal, Aug. 1, 1900.		Principal, July 31, 1901.	
\$4,058,050.61	. . Amounts brought forward, . . .	\$2,298,819.38	\$2,153,061.30
11,357.59	Henry Lee Memorial (1889), . .	11,441.42	
	Charles Eliot Norton (balance),	300.00	
12,228.79	Robert Treat Paine (1887), . .	12,553.55	
55,298.40	John Parker (1873),	55,447.41	
32,525.28	Rogers (1869),	31,878.96	
11,004.74	Henry Bromfield Rogers Memo- rial (1889),	11,396.98	
400.00	South End House (balance), . . .	400.00	
11,341.07	John Tyndall (1885),	11,624.10	
11,322.81	James Walker (1881),	11,354.99	
21,744.60	Whiting (1896),	22,466.61	
SCHOLARSHIP FUNDS.			
3,627.32	Abbot (1852),	3,697.79	
1,722.34	Alford (1785),	1,803.27	
5,443.00	Bartlett 1881),	5,448.82	
5,655.62	Bassett (1876)	5,699.45	
12,824.02	Bigelow (1865),	12,843.41	
2,004.92	Borden (1896),	2,099.16	
111,943.37	Bowditch (1864),	112,621.37	
2,056.00	Bright (balance	2,164.34	
3,727.57	Browne (1687),	3,752.79	
5,078.78	Morey Willard Buckminster (1898),	5,117.49	
32,175.30	Burr (1895),	32,420.86	
6,080.50	Ruluff S. Choate (1884),	6,091.26	
8,037.05	Class of 1802 (1870),	8,214.79	
3,114.74	" 1814 (1853),	3,136.14	
6,427.87	" 1815 (Kirkland) (1852),	6,413.33	
4,386.49	" 1817 (1852),	4,442.63	
3,494.89	" 1828 (1882),	3,459.15	
4,753.08	" 1835 (1853),	4,801.47	
4,058.29	" 1841 (1871),	4,049.02	
4,987.63	" 1852 (Dana) (1876), . .	5,088.73	
15,254.67	" 1856 (1885),	15,371.66	
4,582.51	" 1867 (1886),	4,622.91	
5,000.00	" 1883 (1900),	5,250.00	
11,634.55	Crowninshield (1877),	11,739.73	
600.00	W. H. Cudworth (balance), . .	600.00	
5,317.78	Francis H. Cummings (1898), .	5,367.73	
5,507.20	Geo. and Martha Derby (1881),	5,516.03	
4,901.36	Julius Dexter (1892),	4,965.05	
2,698.95	O. W. Doe 893),	2,725.80	
5,540.90	W. S. Eliot (1875),	5,467.99	
39,579.30	Joseph Eveleth (1896),	39,906.19	
2,100.06	Fall River (1893),	2,105.42	
6,210.72	Farrar (1873),	6,169.30	
\$4,565,800.67	. . Amounts carried forward, . . .	\$2,810,756.48	\$2,153,061.30

		Principal, July 31, 1901.	
. . Amounts brought forward, . . .		\$2,810,756.48	\$2,153,061.80
Richard Augustine Gambrill			
(1890),	11,169.50		
Charles Haven Goodwin (1889),	7,043.17		
Greene (1863),	4,142.87		
Price Greenleaf (balance), . . .	200.00		
William Hilton (1897),	23,211.52		
Ebenezer Rockwood Hoar (1895),	10,484.57		
Levina Hoar (1876),	6,200.84		
Hodges (1878),	13,508.42		
Hollis (1722),	6,092.91		
Henry B. Humphrey (1890), . .	10,686.96		
G. E. Lowell (1886),	10,232.59		
Matthews (balance),	3,777.78		
Merrick (1888),	6,026.40		
Morey (1868),	8,164.51		
Lady Mowlson (1648),	5,659.05		
Howard Gardner Nichols (1897),	5,487.16		
Lucy Osgood (1873),	5,011.88		
Pennoyer (1670),	6,378.20		
Perkins (1869),	4,202.76		
Wendell Phillips Mem'l (1895),	1,486.30		
Ricardo Prize (balance),	350.00		
Rodger (1883),	1,292.87		
Henry B. Rogers (1859),	3,457.92		
Edward Russell (1877),	5,576.28		
Sales (1893),	5,418.82		
Saltonstall (1789),	10,732.37		
Leverett Saltonstall (1895), . .	8,275.57		
Mary Saltonstall (1730),	6,890.37		
Sever (1868),	3,234.45		
Sewall (1696),	10,692.58		
Shattuck (1854),	48,462.63		
Slade (1877),	5,959.32		
Story (1864),	4,380.39		
Stoughton (1701),	2,663.72		
Swift (1899),	2,182.93		
Thayer (1857),	77,139.23		
Gorham Thomas (1865),	4,113.22		
Toppan (1868),	7,524.34		
Townsend (1861),	25,082.57		
Walcott (1855),	4,575.46		
Christopher M. Weld (1899), .	10,330.52		
Jacob Wendell (1899),	5,221.32		
Whiting (1874),	11,287.61		
. . Amounts carried forward, . . .		\$3,224,768.36	\$2,153,061.80

Principal, Aug. 1, 1900.		Principal, July 31, 1901.
\$4,964,452.43	. . Amounts brought forward, . . .	\$3,224,768.36 \$2,153,061.2

BENEFICIARY FUNDS.

478.26	Nathaniel Appleton (1772), . .	500.73
1,625.20	Frank Bolles Memorial (1894), .	1,652.58
1,311.63	William Brattle 1717),	1,373.29
854.04	Thomas Danforth (1724), . . .	894.18
5,448.73	Moses Day (1880),	5,448.73
841.58	John Ellery (1788),	357.65
1,333.34	Exhibitions 796),	1,333.34
640.56	Thomas Fitch (1737),	670.69
368.22	Ephraim Flynt.(1723),	385.52
128.05	Henry Flynt (1760),	134.07
382.81	Henry Gibbs (1722),	400.81
2,535.92	John Glover (1653)	2,655.11
6,220.52	Price Greenleaf Aid (balance), .	7,585.48
307.44	Edward Holyoke 1743),	321.87
2,034.13	Robert Keyne (1659),	2,124.13
839.62	Mary Lindall 1812),	879.10
4,976.59	Susan B Lyman (1899),	5,210.51
179.35	Anne Mills (1725	187.76
10,812.36	Munroe (1880),	10,812.36
1,979.49	Palfrey Exhibition (1821),	1,992.50
4,270.89	Dr. A. P Peabody Memorial (1896),	4,331.63
170.79	Joseph Sewall 765)	178.83
13,973.22	Alexander W. Thayer (1899), .	14,149.95
11,155.10	Quincy Tufts (1877),	11,155.10
230.60	Benjamin Wadsworth (1737), .	241.46

PRIZE FUNDS.

1,338.21	James Gordon Bennett (1893), .	1,361.10
14,662.06	Bowdoin Prizes for Dissertations, (1791),	14,451.17
3,694.54	Boylston Prizes for Elocution (1817),	3,613.20
5,108.03	Coolidge Debating (1899),	5,148.11
100.00	Dante (balance),	100.00
1,697.35	Edward Hopkins Gift for "De- turs" (1718) (balance),	1,796.65
1,055.38	Sales (1892),	1,059.96
2,485.71	John O. Sargent (1889),	2,502.55
7,101.11	George B Sohler (1890),	7,074.47
3,037.72	Charles Sumner 1874),	3,180.51
3,494.30	Robert N Toppan (1894),	3,508.52
2,068.40	Philip Washburn 1899),	2,090.60
	David A. Wells (1901),	78,426.46 3,424,059.0
\$5,082,893.68	. . Amounts carried forward,	\$5,577,120.1

Principal, Aug 1, 1900.		Principal, July 31, 1901.
\$5,082,893.68	.. Amounts brought forward,	\$5,577,120.84

LIBRARY FUNDS.

2,159.29	Bowditch (1861),	\$2,122.62	
123.51	Bright (balance),	195.93	
532.99	Fund of the Class of 1851 (1899),	558.04	
524.82	" " " 1851 (C. F.		
	Dunbar's Gift) (1899),	549.49	
27,738.06	Edwin Conant (1892),	27,783.45	
25,951.35	Constantius (1886),	25,978.28	
5,347.88	Denny (1875),	5,308.72	
5,310.70	Farrar (1871),	5,309.08	
3,161.63	Haven (1844),	3,195.34	
10,098.62	Hayes (1885),	10,079.59	
5,274.99	Hayward (1864),	5,298.67	
2,371.50	Hollis (1781),	2,373.12	
2,153.47	Homer (1871),	2,147.96	
500.00	Jarvis (1885),	500.00	
5,332.42	Lane (1868),	5,320.27	
25,574.78	Lowell (1881),	26,034.62	
60,876.55	Minot (1870),	60,724.96	
7,196.02	Lucy Osgood (1873),	7,180.76	
7,071.75	Mary Osgood (1860),	7,040.22	
3,951.19	Sales (1892),	3,942.08	
5,381.04	Salisbury (1858),	5,307.75	
20,090.31	Sever (1878),	20,138.53	
4,012.04	Shapleigh (1801),	4,000.48	
10,614.72	Subscription for Library (1859), . .	10,582.12	
37,568.47	Sumner (1875),	37,621.50	
5,087.93	Kenneth Matheson Taylor (1899),	5,113.14	
11,925.34	Daniel Treadwell (1885),	11,925.34	
5,223.02	Ichabod Tucker (1875),	5,268.09	
15,888.93	Walker (1875),	15,901.02	
5,337.73	Ward (1858),	5,299.60	
270.03	Waterston Gift (balance),	236.41	
10,127.65	J. Huntington Wolcott (1891),	20,122.29	
100,000.00	Eben Wright (1883),	100,000.00	
64.04	J. Randolph Coolidge Gift (bal.),		
667.82	Sundry Gifts (unexpended bal.), . .	1,735.43	\$444,894.90

DIVINITY SCHOOL FUNDS.

27,995.74	Divinity School (balance),	\$28,219.07	
71,427.02	New Endowment (1879),	71,427.02	
17,000.00	Oliver Ames (1880),	17,000.00	
525.00	Hannah C. Andrews (1886), . .	525.00	
890.00	Daniel Austin (1880),	890.00	
1,000.00	Adams Ayer (1869),	1,000.00	
\$5,635,242.03	.. Amounts carried forward,	\$119,061.09	\$6,022,015.24

Principal, Aug. 1, 1900.		Principal, July 31, 1901.
\$5,635.242.08	.. Amounts brought forward, . . .	\$119,061.09 \$6,022,015.34
7,875.00	Joseph Baker (1876),	7,875.00
4,517.79	Beneficiary money returned (balance),	4,730.14
3,526.34	Rushton Dashwood Burr (1894),	3,692.06
37,583.74	Bussey Professorship (1862), . .	37,583.74
2,177.95	Joshua Clapp (1836),	2,177.95
5,000.00	Edwin Conant (1892),	5,000.00
20,280.38	Dexter Lectureship (1810), . . .	20,280.38
44,210.77	Frothingham Professorship (1892),	46,288.69
1,050.00	Abraham W. Fuller (1847), . .	1,050.00
911.34	Lewis Gould (1852),	911.34
658.16	Louisa J. Hall (1893),	658.66
6,008.43	Hancock Professorship (1765), .	6,008.43
76,885.81	Charles L. Hancock (1891), . .	76,885.81
5,000.00	Haven (1898),	5,000.00
1,050.00	Samuel Hoar (1857),	1,050.00
10,000.00	Henry P. Kidder (1881), . . .	10,000.00
9,184.69	Henry Lienow (1841),	9,184.69
1,050.00	Caroline Merriam (1867), . . .	1,050.00
16,015.81	Parkman Professorship (1814), .	16,015.81
440.14	John W. Quinby (1888),	460.82
1,000.00	Abby Crocker Richmond (1881),	1,000.00
1,000.00	John L. Russell (1890),	1,000.00
10,000.00	William B. Spooner (1890), . .	10,000.00
40,000.00	Thomas Tileston of New York Endowment (1879),	40,000.00
5,250.00	Mary P. Townsend (1861), . .	5,250.00
2,100.00	Winthrop Ward (1862),	2,100.00
53,345.73	Winn Professorship (1877), . . .	53,845.73

SCHOLARSHIP AND BENEFICIARY FUNDS.

12,964.47	Abner W. Buttrick (1880), . . .	13,038.78
5,223.58	Thomas Cary (1820),	5,469.11
2,649.46	George Chapman (1834), . . .	2,673.96
4,372.78	Joshua Clapp (1839),	4,398.31
14,471.25	Jackson Foundation (1835), . . .	14,831.39
5,249.14	J. Henry Kendall (1863), . . .	5,295.84
3,388.60	Nancy Kendall (1846),	3,407.88
1,050.00	William Pomroy (1835),	1,050.00
		558,355.1

LAW SCHOOL FUNDS.

130,175.54	Law School (balance),	\$163,400.89
3,813.81	James Barr Ames Prize (1898),	3,977.38
65,604.10	Bemis Professorship (1879), . . .	65,687.49
23,979.82	Bussey " (1862),	23,979.82
15,750.00	Dane " (1829),	15,750.00
\$6,290,056.66	.. Amounts carried forward, . . .	\$272,795.53 \$6,560,370

Principal, Aug. 1, 1900.		Principal, July 31, 1901.	
\$6,390,056.66	Amounts brought forward, . . .	\$272,795.53	\$6,560,370.85
47,021.25	Law School Book 1882),	47,021.25	
100,000.00	Law School Library (1898 ,	100,000.00	
8,340.81	Royall Professorship 781),	8,340.81	
1,210.08	Scholarship money returned (balance),	1,266.95	
94,994.97	Weld Professorship (1882),	94,994.97	524,419.51

LAWRENCE SCIENTIFIC SCHOOL FUNDS.

30,686.85	John B. Barringer (1878), . . .	\$30,686.85	
5,570.07	George A. Gardner 1892), . . .	5,684.09	
10,417.52	Hennen Jennings Scholarship (1898),	10,507.17	
61,536.43	Abbott Lawrence (1859),	61,536.43	
50,375.00	James Lawrence 1865),	50,375.00	
40,805.73	Professorship of Engineering (1847),	40,805.73	
25,000.00	Arthur Rotch (1895),	25,000.00	
5,047.26	Stuart Wadsworth Wheeler (1898),	5,109.47	229,704.74

MUSEUM OF COMPARATIVE ZOOLOGY FUNDS.

29,291.85	Museum of Comparative Zoölogy (bal.),	\$31,745.35	
297,933.10	Agassiz Memorial (1875	297,933.10	
7,594.01	Teachers' and Pupils' (1875), . . .	7,594.01	
5,485.69	Virginia Barret Gibbs Scholar- ship (1892),	5,576.87	
50,000.00	Gray Fund for Zoölogical Museum (1859),	50,000.00	
108,708.65	Sturgis Hooper (1865),	108,359.56	
7,740.66	Humboldt (1869),	7,740.66	
	Willard Peele Hunnewell (1901),	5,000.00	
117,469.34	Permanent (1859 ,	117,469.34	
2,292.65	Gifts, Collection of Mammal Skins,		631,418.89

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY
AND ETHNOLOGY FUNDS.

11,244.87	Hemenway Fellowship (1891), . .	\$11,348.39	
28,355.56	Peabody Building 1866)	28,355.56	
47,335.10	Peabody Collection (1866), . . .	47,335.10	
47,496.03	Peabody Professor (1866), . . .	47,535.39	
30,151.28	Thaw Fellowship (1890),	30,165.30	
10,253.64	Henry C. Warren Exploration (1899),	10,300.58	
5,260.12	Robert C. Winthrop Scholarship (1895),	5,307.34	
10,000.00	Huntington Frothingham Wol- cott (1891),	20,061.25	200,408.91
\$7,587,675.18	Amounts carried forward,	\$8,146,322.30	

Principal,
Aug. 1, 1900.

Principal, July 31, 1901.

\$7,587,675.18	.. Amounts brought forward,	\$8,146,322.90
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MEDICAL SCHOOL FUNDS.

56,788.10	Medical School (balance),	\$64,397.93
8,989.60	Edward Austin (Bacteriological Laboratory) (1899),	10,855.97
25,512.68	Edward M. Barringer (1881),	25,512.68
6,044.93	J Ingersoll Bowditch (1889),	6,162.99
3,205.33	Boylston Fund for Medical Books (1800),	3,033.02
18,591.77	John B. & Buckminster Brown Professorship 1896)	19,465.59
92,750.54	Caroline Brewer Croft (1899),	92,912.09
270,244.83	Calvin Ellis (1899),	316,737.42
51,015.06	Lucy Ellis 1899),	60,961.27
100,872.51	George Fabyan (1896),	101,338.02
1,836.08	Samuel E. Fitz (1884),	1,836.08
	F B. Greenough (Surgical Research) (1901),	1,019.60
19,192.65	Jackson Medical (1859),	19,192.65
1,532.08	Medical Library 1872),	1,604.12
52,900.33	William O. Moseley (1897),	52,900.33
38,750.00	New Subscription (1888),	38,750.00
9,335.94	Dr. Rupperner (1897),	9,335.94
17,129.20	Geo. C Shattuck (1853),	50,000.00
6,819.95	Surgical Laboratory (1897),	6,069.08
15,765.11	Mary W Swett (1884),	15,765.11
20,000.00	Samuel W. Swett (1884),	20,000.00
2,000.00	Quincy Tufts (1879),	2,000.00
14,067.03	Warren Fund for Anatomical Museum 1848),	14,340.55
15,256.50	Charles Wilder (1900),	41,279.10
33,029.15	Henry Willard Williams (1893),	33,331.51
3,756.82	Gifts for Pathological Dep't Library (balance),	1,882.08
404.48	Sundry Gifts (unexpended balances),	1,087.41

FELLOWSHIP FUNDS.

5,269.46	Geo. Cheyne Shattuck Memorial (1891),	5,292.10
5,539.40	Charles Eliot Ware Memorial (1891),	5,664.73
5,232.10	John Ware Memorial (1891),	5,253.00

SCHOLARSHIP FUNDS.

	Lucius F. Billings (1900),	5,025.22
5,691.51	D. W. Cheever (1889),	5,709.03
3,069.90	Cotting Gift (1900),	3,089.19

\$8,498,268.22	.. Amounts carried forward,	\$1,041,803.81	\$8,146,322.90
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Principal,
Aug. 1, 1900.

Principal, July 31, 1901.

3,498,268.22	.. Amounts brought forward, ..	\$1,041,808.81	\$8,146,322.90
2,698.95	Orlando W. Doe (1893),	2,765.80	
150.42	John Foster income for Medical Students (balance),	60.42	
5,807.63	Lewis and Harriet Hayden (1894),	5,817.63	
6,222.63	C. M. Jones (1893),	6,365.11	
5,266.20	Alfred Hosmer Linder (1895),	5,233.70	
5,462.78	Charles B. Porter (1897), . . .	5,519.54	
4,303.96	Charles Pratt Strong (1894), .	4,406.25	
6,250.60	Isaac Sweetser (1892),	6,294.40	
5,188.03	John Thompson Taylor (1899),	5,231.87	
5,285.67	Edward Wigglesworth (1897), .	5,254.11	

PRIZE FUNDS.

3,476.53	Boylston (1803),	3,527.45	
5,930.89	William H. Thorndike (1895),	6,209.65	1,098,489.74

DENTAL SCHOOL FUNDS.

33,283.06	Dental School (balance),	\$37,370.04	
2,255.85	Dental School Endowment (1880), .	2,255.85	
23,000.00	Henry C. Warren Endowment (1889),	23,000.00	
18,064.29	Gifts for Building (1892),	18,913.30	81,539.19

OBSERVATORY FUNDS.

2,249.36	Observatory (balance),	\$2,792.80	
	Advancement of Astronomical Science (1901),	50,088.55	
5,000.00	Thomas G. Appleton (1884), .	5,000.00	
2,500.00	J. Ingersoll Bowditch (1889), .	2,500.00	
200,802.57	Uriah A. Boyden (1887), . . .	198,965.70	
94.66	Bruce Gift (balance),	94.66	
966.16	Draper Memorial (balance), . .	299.39	
2,000.00	Charlotte Harris (1877),	2,000.00	
45,000.00	Haven (1898),	45,000.00	
21,000.00	James Hayward (1866),	21,000.00	
50,000.00	Observatory Endowment (1882), .	50,000.00	
50,000.00	Paine Professorship (1886), . . .	50,000.00	
273,557.86	Robert Treat Paine (1886), . .	273,557.86	
110,293.88	Edward B. Phillips (1849), . .	110,293.88	
11,187.35	Josiah Quincy (1866),	11,713.14	
34,846.70	David Sears (1845),	35,665.61	
13,380.00	Augustus Story (1871),	13,380.00	872,351.59

BUSSEY INSTITUTION FUNDS.

24,422.84	Bussey Institution (balance), . . .	\$27,189.93	
11,618.45	Woodland Hill (1895),	10,538.34	87,728.27
9,489,835.54	.. Amounts carried forward,	\$10,236,431.69	

Principal,
Aug. 1, 1900.

Principal, July 31, 1901.

\$9,489,835.54	.. Amounts brought forward,	\$10,236,431.69
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ARNOLD ARBORETUM FUNDS.

29,500.00	Arnold Arboretum (1899),	\$71,795.00	
158,575.15	James Arnold 1872),	158,947.80	
6,459.28	Arboretum Construction Gifts (bal.),	16,155.04	
22,183.39	William L. Bradley (1897), . .	22,261.93	269,159.77

OTHER FUNDS FOR SPECIAL PURPOSES.

5,152.59	Anonymous (1896),	\$5,194.78	
441,399.94	Edward Austin (1899),	471,109.26	
50,000.00	Bright Legacy (1880),	50,000.00	
	Phillips Brooks House Endow-		
	ment (1901)	10,506.66	
27,929.80	Bursar's Sundry Accounts (balance),	38,747.12	
392,710.18	Bussey Trust (1861),	392,710.18	
1,160.00	Fund of the Class of 1834 (1887),	1,207.52	
6,804.35	" " " 1844 (1896),	7,078.64	
3,725.00	" " " 1853 (1887),	3,725.00	
105,503.59	Calvin and Lucy Ellis Aid (1899),	158,786.55	
47,555.65	William Hayes Fogg (1892), .	50,000.00	
3,171.50	John Foster (1840),	3,171.50	
3,633.77	Free Bed Fund of the Class of		
	1868 (1898),	5,084.55	
	Free Bed Fund for Stillman Infirm-		
	ary (1900),	514.66	
185,458.08	Gains and Losses for General Invest-		
	ments (1891),	185,458.08	
15,851.77	Gray Fund for Engravings (1858),	16,938.58	
719,291.31	Price Greenleaf 1887),	719,291.31	
29,939.33	Henry Harris 1883),	29,939.33	
1,271.87	Harvard Memorial Society (1898),	1,259.78	
46,898.04	Robert Troup Paine 1880), . .	48,237.44	
15,814.07	William M. Prichard (1898), .	15,979.01	
32,786.97	John Witt Randall (1892), . .	32,384.76	
5,296.57	John W. and Belinda L. Randall		
	(1897),	5,345.53	
42,000.00	James Savage (1873),	42,000.00	
4,128.38	Schoo of Comparative Medicine (1899),	4,322.40	
10,057.00	Ralph H. Shepard 1900), . . .	10,147.91	
5,772.99	Ralph Hamilton Shepard Memo-		
	rial (1898),	5,897.78	
	Henry P. Walcott (1901), . . .	2,524.49	
60,092.63	Gifts for Cuban Teachers,	2,331.00	
5,065.08	Gift for Pathological Laboratory		
	(Veterinary School)	5,166.38	
\$11,975,023.82	.. Amounts carried forward, . .	\$2,325,060.20	\$10,505,591.46

<u>Principal, Aug. 1, 1900.</u>		<u>Principal, July 31, 1901.</u>	
\$11,975,023.82	. . Amounts brought forward, . .	\$2,325,060.20	\$10,505,591.46
	Gifts for Additions to Soldier's Field		
	(1898),	5,047.77	
120,582.65	Architecture Building (balance), . .	55,916.69	
30,000.00	Brighton Marsh Fence " . .	517.91	
50.00	Phillips Brooks House (balance),		
22,786.04	New Boat House "		
183,638.06	Pierce Hall "	80,668.06	
49,748.63	Semitic Building "	36,251.87	
13,260.47	John Simpkins Hall "	1,627.32	
97,971.98	Stillman Infirmary "	33,111.49	
100,255.56	University Museum Building "	43,171.59	
	F. L. Higginson's Gift (The		
	Harvard Union),	10,096.11	
	Sundry balances,	1,318.20	2,592,787.21

FUNDS IN TRUST FOR PURPOSES NOT
CONNECTED WITH THE COLLEGE.

16,347.61	Daniel Williams (1716),	\$16,370.09	
4,783.37	Sarah Winslow (1790),	4,789.85	21,159.94
\$12,614,448.19			\$13,119,538.61

Changes in the Funds during the year ending July 31, 1901.

Total amount of Funds and balances, July 31, 1901,	
as before stated,	\$18,119,588.61
Total amount of Funds and balances, August 1, 1900,	
as before stated,	<u>12,614,448.19</u>
Showing a total increase during the year of	<u><u>\$505,090.42</u></u>

Which is made up as follows :—

Gifts forming new Funds or increasing old ones, .	\$826,669.43		
Increase of Funds established during the year, . .	525.22		
Credit balances created,	28,461.70		
Gain from change of investments,	746.86		
Increase of Insurance and Guaranty Fund, by excess of income over expenditures in Uni- versity, College, and Library accounts, . . .	2,847.91		
	<u>\$858,751.12</u>		
Deduct from this amount			
Sundry balances used up,	\$125,409.67		
Loss from change of investments, . .	3,337.74		
Decrease more than increase of Funds and balances, which appear both at the beginning and end of the year, 219,918.29		348,660.70	<u><u>\$505,090.42</u></u>

Net decrease of Funds and balances as above, . . .	\$348,660.70
Less increase as above,	<u>27,081.69</u>
Leaving amount of the net decrease of the Funds and balances, excluding gifts for capital ac- count,	<u><u>\$321,579.01</u></u>

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every Fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every Fund, in case that sum be either less or more than the actual income of the Fund. If the object to which the income of a Fund is to be applied be a general one, — like salaries, for example, — no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 92.

TABLE NO. I.
THE UNIVERSITY.

RECEIPTS.

Income of the following Funds:—

Andrew Bigelow,	\$232.65
Robert C. Billings,	4,832.79
Stanton Blake,	235.00
Charlotte F. Blanchard,	224.24
Samuel D. Bradford,	246.75
John W. Carter,	587.50
Thomas Cotton,	7.29
John Cowdin,	2,042.46
George B. Dorr,	3,515.03
George Draper,	2,198.89
Robert H. Eddy,	773.53
Harvard Ellis,	4,757.58
Gore,	966.84
John C. Gray,	757.76
Henry Harris ($\frac{1}{4}$ income),	703.56
Walter Hastings,	537.39
George Baxter Hyde,	235.00
Insurance and Guaranty,	3,938.59
Leonard Jarvis,	792.98
Henry P. Kidder,	470.00
Joseph Lee,	303.11
Theodore Lyman,	470.00
Henry T. Morgan (part),	1,851.70
Israel Munson,	740.25
Francis E. Parker,	3,449.88
William Perkins,	1,410.00
Henry L. Pierce Residuary (part),	19,798.75
President's,	2,985.20
Retiring Allowance,	16,640.68
John L. Russell,	1,098.39
Isaac Sweetser,	2,204.91
Seth Turner,	235.00
William F. Weld,	3,031.07
Amount carried forward,	\$81,774.77

TABLE NO. I, THE UNIVERSITY, CONTINUED.

RECEIPTS.

Amount brought forward,		\$81,774.77	
Balance remaining after dividing the net income among the Funds,	\$299.63		
Care of the Sarah Winslow Fund,	5.62		
Sale of catalogues, calendars, directories, &c.,	1,321.63		
“ wood and sand,	60.00		
Use of houses by College officers,	1,300.00		
Received on account of stolen book plates,	156.47		3,143.35
William Hayes Fogg Art Museum.			
Income of William Hayes Fogg Fund, . . .	\$2,235.13		
“ “ Gray Fund for Engravings, . \$745.04			
Repayment, 1,592.40	2,337.44		
“ “ William M. Prichard Fund, . . .	743.26		
“ “ John Witt Randall Fund,	1,540.99		6,856.82
Phillips Brooks House.			
Income of Endowment, \$345.90			
Gift, 45.48	\$291.38		
Income of Ralph H. Shepard Fund,	472.68		
“ “ Ralph Hamilton Shepard Memorial Fund,	271.33		1,035.39
			<u>\$92,810.33</u>

PAYMENTS.

Overseers' Expenses.			
Printing President's Annual Report,	\$1,160.76		
“ Treasurer's “ “	293.40		
“ other reports,	101.75		
Advertising,	298.05		
Auditing Treasurer's accounts,	125.00		\$1,978.96
Office Expenses.			
President's,			
Clerical services,	\$366.50		
Other expenses,	122.34		\$488.84
Treasurer's,			
Clerical services,	\$917.50		
Other expenses,	1,423.41		2,340.91
Bursar's,			
Clerical services,	\$3,295.90		
Other expenses,	1,862.91		5,158.81
Publication Agent's,			
Clerical services,	\$1,322.12		
Other expenses,	2,652.26		3,974.38
Amounts carried forward,	\$11,962.94		\$1,978.96

TABLE NO. I, THE UNIVERSITY, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$11,962.94	\$1,978.96
Office Expenses (continued).		
Inspector of Grounds and Buildings',		
Clerical services,	\$812.50	
Other expenses,	<u>192.92</u>	1,005.42
Janitor's,		17.45
Corporation Rooms (fuel, rent, &c.),	<u>2,538.44</u>	15,524.25
Salaries.		
President,		
From the University,	\$4,750.00	
" President's Fund,	2,896.92	
" Thomas Cotton Fund,	<u>7.07</u>	\$7,653.99
Acting President,		2,500.00
Treasurer,		6,000.00
Comptroller,		5,000.00
Bursar,		4,000.00
Assistant Bursar,		2,000.00
Corresponding Secretary,		1,750.00
Recording Secretary,		2,000.00
Secretary of the Board of Overseers,		200.00
Publication Agent,		2,000.00
Clerks, Treasurer's office,		3,150.00
Bursar's Assistant,		1,700.00
Superintendent of Buildings,	<u>2,000.00</u>	39,953.99
Retiring Allowances,		9,527.62
Memorial Hall and Sanders Theatre.		
Repairs,	\$132.03	
Fuel, lighting, furniture, cleaning, &c.,	578.46	
Insurance,	554.43	
Motor generator, and work for stereopticon,	<u>538.12</u>	1,803.04
General Expenses.		
Repairs and improvements,	\$2,259.00	
Janitors and cleaning,	52.00	
Labor,	5,054.10	
Commencement Programme,	90.80	
Annual Catalogue and Calendar,	2,878.31	
Furniture,	43.50	
Advertising,	1,600.77	
Taxes,	490.10	
Watchmen,	2,168.28	
Freight, supplies, and sundries,	765.02	
Legal services and expenses,	40.00	
Music, Commencement,	<u>185.00</u>	
Amounts carried forward,	\$15,626.38	\$68,787.86

TABLE NO. I, THE UNIVERSITY, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$15,626.38	\$68,787.86
General Expenses (continued).		
Telephone,	105.33	
Buffalo Exposition expenses,	141.70	
Paris Exposition expenses,	21.00	
Delegates' expenses,	181.68	
Drains,	213.89	
Street-watering assessments,	306.11	
Plank walks,	152.38	
Mercantile agency,	1,113.00	
Surveys and plans,	283.00	
Preserving old account-books,	74.00	
Deficit in the School of Veterinary Medicine for 1900-01,	8,456.45	
Payments made from University income on account of William Hayes Fogg Art Museum.		
Part of expenses for 1900-01, . . . \$2,854.05		
Part of expenses for former years, repaid to William Hayes Fogg		
Fund,	8,030.98	
	<u>\$5,885.03</u>	
Less repayments to the University,	201.07	5,683.96
Payments made from University income on account of Phillips Brooks House,		
	<u>1,717.10</u>	34,025.48
William Hayes Fogg Art Museum.		
Payments of \$2,854.05, made from University income on account of expenses for 1900-01, as above stated, and payments from the income of Funds as follows:—		
William Hayes Fogg, Director,	\$500.00	
Collections and expenses,	2,321.76	\$2,821.76
William M. Prichard, collections,		578.32
John Witt Randall, Curator,	\$250.00	
Collections and expenses,	1,693.20	1,943.20
Gray Fund for Engravings, Curator,	\$250.00	
Collections and expenses,	1,000.63	1,250.63
		6,593.91
Phillips Brooks House.		
Payments of \$1,717.10, made from University income on account of expenses for 1900-01, as above stated, and payments for furniture, receptions, &c., from the income of Funds as follows:		
Phillips Brooks House Endowment,	\$291.38	
Ralph H. Shepard,	381.77	
Ralph Hamilton Shepard Memorial,	146.54	
Gifts,	50.00	869.69
		<u>\$110,276.94</u>

TABLE No. II.
THE COLLEGE.

RECEIPTS.

From Term Bills.

Instruction,	\$408,973.75	
Receipts from College dormitories, not included in		
University Houses and Lands,	76,000.25	\$484,974.00

Income of Fellowship Funds, and Gifts for Fellowships.

Edward Austin (part),	\$9,500.00	
Ozias Goodwin Memorial,	497.26	
Harris,	508.07	
John Thornton Kirkland,	508.02	
Henry Lee Memorial,	533.88	
Henry T Morgan (part),	2,000.00	
Charles Eliot Norton (gift),	300.00	
Robert Treat Paine,	574.76	
John Parker,	2,599.01	
Rogers,	1,528.68	
Henry Bromfield Rogers Memorial,	517.24	
South End House (gifts),	600.00	
Travelling Fellowship in Botany (gift),	500.00	
John Tyndall,	533.08	
James Walker,	532.18	
Whiting,	1,022.01	22,254.09

Income of Scholarship Funds, and Gifts for Scholarships.

Abbot,	\$170.47	
Alford (accumulating),	80.93	
Edward Austin (part) for Teachers,	1,833.33	
Bartlett,	255.82	
Bassett,	265.83	
Bigelow,	602.73	
Samuel A. Borden (accumulating),	94.24	
Bowditch,	5,261.32	
Bright ($\frac{1}{2}$ income of Bright Legacy),	1,175.00	
Browne,	175.22	
Morey Willard Buckminster,	238.71	
Burr,	1,512.22	
Ruluff Sterling Choate,	285.76	
Class of 1802,	377.74	
" 1814,	146.40	
" 1815 (Kirkland),	302.12	
" 1817,	206.14	
" 1828,	164.26	
" 1835,	223.39	
" 1841,	190.73	
" 1852 (Dana),	234.44	

Amounts carried forward, \$13,796.80 \$507,228.09

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,		\$13,796.80	\$507,228.00
Income of Scholarship Funds, and Gifts for Scholarships (continued).			
Class of 1856,	716.99		
" 1867,	215.40		
" 1883,	250.00		
Crowninshield,	546.84		
Warren H. Cudworth (gift),	600.00		
Francis H. Cummings,	249.95		
George and Martha Derby,	258.83		
Julius Dexter,	230.35		
Orlando W. Doe,	126.85		
William Samuel Eliot,	260.43		
Joseph Eveleth (part),	1,260.21		
Fall River,	98.70		
Farrar,	291.92		
Richard Augustine Gambrill,	520.48		
Charles Haven Goodwin,	329.66		
Benjamin D. Greene,	192.70		
Price Greenleaf,	3,000.00		
William Hilton (part),	635.75		
Ebenezer Rockwood Hoar,	488.61		
Levina Hoar, for the town of Lincoln,	289.56		
Hodges,	615.37		
Hollis,	283.60		
Henry B. Humphrey,	499.94		
Hennen Jennings,	489.65		
George Emerson Lowell,	477.28		
Matthews ($\frac{1}{2}$ net rents of Hall),	5,399.88		
William Merrick,	276.50		
Morey,	379.99		
Lady Mowison,	263.01		
Howard Gardner Nichols,	255.30		
Lucy Osgood (accumulating),	224.99		
Pennoyer,	203.64		
Perkins,	195.38		
Wendell Phillips,	68.20		
Ricardo Prize (gift),	350.00		
Rodger,	64.77		
Henry Bromfield Rogers,	159.71		
Edward Russell,	259.30		
Sales,	255.21		
Saltonstall,	318.66		
Leverett Saltonstall,	293.33		
Amounts carried forward,		\$35,693.74	\$507,228.00

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$35,693.74	\$507,228.09
Income of Scholarship Funds, and Gifts for Scholarships (continued).		
Mary Saltonstall,	322.80	
Savage,	300.00	
Sever,	154.16	
Sewall,	497.96	
Shattuck,	2,265.26	
Slade,	278.76	
Story,	205.62	
Stoughton,	228.63	
Swift,	97.99	
Thayer,	3,588.50	
Gorham Thomas,	193.64	
Toppan,	346.77	
Townsend,	1,170.86	
Walcott,	211.36	
Christopher M. Weld,	469.72	
Jacob Wendell,	243.86	
Whiting,	524.66	46,798.79
Income of Beneficiary Funds.		
Nathaniel Appleton,	\$22.47	
Edward Austin (part),	2,887.50	
Frank Bolles Memorial,	76.38	
William Brattle,	61.66	
Thomas Danforth,	40.14	
Moses Day,	256.10	
Calvin and Lucy Ellis Aid (part),	815.00	
John Ellery,	16.07	
Exhibitions. Bequest,	\$13.77	
Gift,	100.00	
Interest,	62.65	176.42
Thomas Fitch,	30.13	
Ephraim Flynt,	17.30	
Henry Flynt,	6.02	
Henry Gibbs,	18.00	
John Glover,	119.19	
Price Greenleaf Aid (balance),	16,134.28	
Edward Holyoke,	14.43	
Robert Keyne,	95.60	
Mary Lindall,	39.48	
Susan B. Lyman,	233.92	
Anne Mills,	8.41	
Amounts carried forward,	\$21,068.50	\$554,021.88

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$21,068.50	\$554,021.88
Income of Beneficiary Funds (<i>continued</i>):—		
Munroe,	508.16	
Palfrey Exhibition,	98.01	
Dr. Andrew P. Peabody Memorial,		
Repayment of Loan,	\$25.00	
Interest,	200.74	225.74
Scholarship and Beneficiary Money Returned.		
Loans repaid,	1,207.82	
Joseph Sewall,	8.04	
Alexander W. Thayer (part),	176.73	
Quincy Tufts,	524.28	
Benjamin Wadsworth,	10.86	
Stuart Wadsworth Wheeler,	237.21	24,060.26
Income of Prize Funds.		
James Gordon Bennett,	\$62.89	
Bowdoin Prizes for Dissertations,	689.11	
Boylston Prizes for Elocution,	173.66	
Coolidge Debating,	240.06	
Edward Hopkins Gift for "Deturs."		
From Trustees,	\$191.28	
Interest on unexpended balance,	79.76	271.04
Sales,	49.58	
John O. Sargent,	116.84	
George B. Sohler (part),	250.00	
Charles Sumner,	142.79	
Robert N. Toppan,	164.22	
Philip Washburn,	97.20	
David Ames Wells,	274.35	2,531.76
Income of Funds for Instruction, and Gifts for Salaries.		
Alford Professorship,	\$1,304.20	
John B. Barringer,	1,442.29	
Boylston Professorship,	1,331.84	
Class Subscription,	7,064.01	
Paul Dudley,	154.44	
Eliot Professorship,	1,016.09	
Eliot " (Jon. Phillips' Gift),	350.00	
Calvin and Lucy Ellis Aid (part),	2,975.76	
Erving Professorship,	164.50	
Fisher "	1,691.58	
Henry Flynt,	16.87	
Fund for Permanent Tutors,	763.28	
Gospel Church ($\frac{1}{4}$ income),	141.80	
Amounts carried forward,	\$18,416.66	\$580,613.91

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,		\$18,416.66	\$580,613.99
Income of Funds for Instruction, etc. (<i>continued</i>).			
Asa Gray Professorship,	1,008.20		
Gurney (part),	8,144.41		
Hersey Professorship ($\frac{1}{2}$ income),	570.12		
Hollis " (Divinity),	1,622.35		
Hollis " (Mathematics),	176.11		
Ingersoll Lecture (part),	189.86		
Abbott Lawrence,	2,892.19		
James Lawrence,	2,367.62		
Lectures on Political Economy,	444.81		
Henry Lee Professorship,	3,798.82		
Thos. Lee, for Hersey Professorship,	1,021.97		
Thos. Lee, for Reading,	742.46		
McLean Professorship,	2,023.96		
William Belden Noble Lectures (part),	600.00		
Daniel H. Peirce,	654.76		
Perkins Professorship,	987.00		
Plummer "	1,175.94		
Pope "	2,467.50		
Professorship of Engineering,	1,917.88		
" " Hygiene (part),	5,707.36		
Arthur Rotch,	1,175.00		
Rumford Professorship,	2,652.72		
Gurdon Saltonstall,	1,018.35		
Smith Professorship,	1,087.58		
Josiah Stickney,	602.12		
Unknown Memorial (part),	2,965.09		
Gifts for salaries and lectures,	\$7,825.00		
Interest,	29.36	7,854.36	74,285.20
Income of Funds for General Purposes.			
J. W. P. Abbot (accumulating),	\$383.14		
John A. Blanchard,	49.35		
Jonathan Phillips,	1,480.50		1,912.99
Income of Sundry Funds for Special Purposes.			
Francis James Child Memorial,			
Interest,	\$520.01		
Gift,	50.00	\$570.01	
Classical Publication Fund of the Class of 1856,			
Interest,	\$309.45		
Sales,	200.22	509.67	
John Davis Williams French,	78.35		
George A. Gardner,	261.79		
Harvard Oriental Series,	705.00		
Amounts carried forward,		\$2,124.82	\$656,812.18

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$2,124.82	\$656,812.18
Income of Funds for Special Purposes (<i>continued</i>).		
Ingersoll Lecture (part),	63.28	
Joseph Lovering for Physical Research, . . .	391.51	
William Belden Noble Lectures (part),		
Interest,	\$379.20	
Sales,	19.12	398.32
George W. Sawin,	203.84	
John E. Thayer,	757.03	
Elizabeth Torrey,	55.32	
Henry Warren Torrey. Interest, . .	\$464.78	
Sales,	348.37	808.15
Unknown Memorial (part),	1,800.00	
Samuel Ward,	753.41	
Cyrus M. Warren,	292.43	
Henry C. Warren,	4,910.61	
Chauncey Wright,	45.92	12,604.64
Appleton Chapel.		
Income of Fund for Religious Services,	\$48.60	
" " Increase Sumner Wheeler Fund, .	2,350.00	2,398.60
Jefferson Physical Laboratory.		
Interest on unexpended balance,	\$86.76	
Income of Endowment,	3,525.00	
Gift for present use,	500.00	
" " the improvement of ventilation,	500.00	4,611.76
Hemenway Gymnasium.		
For use of lockers,	\$3,668.50	
" " by graduates,	80.00	3,698.50
Botanic Garden and Botanic Museum.		
Income of Botanic Department Fund,	\$1,869.66	
" " Lowell Fund,	3,119.95	
" " John L. Russell Fund (part), . . .	23.50	
" " Gifts for Cases,	39.45	
Use of house,	700.00	
Gifts for present use,	802.50	
Repayment,	369.78	6,924.84
Gray Herbarium.		
Income of Asa Gray Memorial Fund,	\$1,528.02	
" " Herbarium Fund,	970.83	
" " John L. Russell Fund (part), . . .	70.50	
Asa Gray's copyrights,	1,261.69	
Sale of check lists and duplicate books,	63.45	
" publications and contributions,	79.23	
Gifts for present use,	4,160.29	
" type specimens,	100.00	8,234.01
Amount carried forward,		\$695,284.53

TABLE NO. II, THE COLLEGE, CONTINUED.

RECEIPTS.

Amount brought forward, \$695,284.58

Sundry Gifts.

For Department of Architecture, interest,		\$778.18	
“ “ “ The Classics. Interest,	\$1.91		
“ “ “ Sales,	178.44	180.35	
“ “ “ Geography (lantern) interest,		5.73	
“ “ “ Mathematics,		15.00	
“ “ “ Music,		100.00	
“ “ “ Political Economy,		50.00	
“ “ “ Sanskrit. Interest,	\$69.71		
“ “ “ Sales,	46.50	116.21	
“ Annals of Mathematics,		57.11	
“ Books on Government,		100.00	
“ Lowell Memorial Library,		52.00	
“ Norwegian photographs,		100.00	
“ Sugar-cane investigations,	\$2,500.00		
“ “ Interest,	14.28	2,514.28	
“ Collections for a Germanic Museum,	\$525.00		
“ “ Interest,	57.14	582.14	
“ Semitic Collection. Interest,	\$767.14		
“ “ Repayment,	189.51	956.65	
“ “ Library, interest,		30.92	
“ Present use, unrestricted,		600.00	6,233.52
Laboratory fees received.			
Botany,		\$995.00	
Chemistry,		13,137.79	
Geology,		1,127.50	
Hygiene,		1,040.00	
Mineralogy,		572.50	
Mining and Metallurgy,		899.31	
Psychology,		230.00	
Physics,		3,645.00	
Zoology,		800.00	
Cambridge Manual Training School, shopwork,		1,019.55	23,466.65
Undries.			
For use of rooms by College Society,		\$1,260.00	
Sale of tickets to Commencement Dinner,		622.00	
“ hymn books,		69.96	
“ publications,		1,347.15	
“ old examination papers,		425.78	
Fees for admission and condition examinations,		2,993.00	
“ Summer Courses,	\$18,146.35		
Other receipts from Summer Courses,	400.00	18,546.35	
Summer Camp, Engineering,		1,035.60	
Advances to Department of Engineering repaid,		2.00	
Loans repaid,		237.62	
Salary repaid,		100.00	
Unexpended balance of appropriation returned, . . . . .		.99	26,640.45
			\$751,025.15

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

From Fellowship Funds and Gifts.

Edward Austin, Architecture,	\$1,000.00	
Edward Austin, Teaching,	8,500.00	
Harris,	500.00	
John Thornton Kirkland,	675.00	
Henry Lee Memorial,	450.00	
Morgan,	2,000.00	
Robert Treat Paine,	250.00	
John Parker,	2,450.00	
Rogers,	2,175.00	
Henry Bromfield Rogers Memorial,	225.00	
South End House,	600.00	
Travelling Fellowship in Botany,	500.00	
John Tyndall,	250.00	
James Walker,	500.00	
Whiting,	300.00	\$30,375.00

From Scholarship Funds and Gifts.

Abbot,	\$100.00	
Edward Austin for Teachers,	1,883.33	
Bartlett,	250.00	
Bassett,	222.00	
Bigelow,	583.34	
Bowditch,	4,583.32	
Bright,	1,066.66	
Browne,	150.00	
Morey Willard Buckminster,	200.00	
Burr,	1,266.66	
Ruluff Sterling Choate,	275.00	
Class of 1802,	200.00	
" 1814,	125.00	
" 1815 (Kirkland),	316.66	
" 1817,	150.00	
" 1828,	200.00	
" 1835,	175.00	
" 1841,	200.00	
" 1852 (Dana),	133.34	
" 1856,	600.00	
" 1867,	175.00	
Crowninshield,	441.66	
Warren H. Cudworth,	600.00	
Francis H. Cummings,	200.00	
George and Martha Derby,	250.00	
Julius Dexter,	166.66	
O. W. Doe,	100.00	
William Samuel Eliot,	333.34	

Amounts carried forward, \$14,896.97 \$30,375.00

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$14,896.97	\$20,375.00
From Scholarship Funds and Gifts (<i>continued</i>).		
Joseph Eveleth,	933.32	
Fall River,	93.34	
Farrar,	333.34	
Richard Augustine Gambrill,	425.00	
Charles Haven Goodwin,	300.00	
Benjamin D. Greene,	150.00	
Price Greenleaf,	3,000.00	
Hilton,	525.00	
Ebenezer Rockwood Hoar,	400.00	
Levina Hoar, for the town of Lincoln,	250.00	
Hodges,	200.00	
Hollis,	225.00	
Henry B. Humphrey,	450.00	
Hennen Jennings,	400.00	
George Emerson Lowell,	400.00	
Matthews,	5,399.05	
William Merrick,	133.34	
Morey,	300.00	
Lady Mowlson,	200.00	
Howard Gardner Nichols,	200.00	
Pennoyer,	100.00	
Rebecca A. Perkins,	150.00	
Wendell Phillips Memorial,	33.34	
Ricardo Prize,	350.00	
Rodger,	150.00	
Henry Bromfield Rogers,	100.00	
Edward Russell,	200.00	
Sales,	266.68	
Saltonstall,	116.66	
Leverett Saltonstall,	133.34	
Mary Saltonstall,	300.00	
Savage,	300.00	
Sever,	200.00	
Sewall,	400.00	
Shattuck,	2,000.00	
Slade,	250.00	
Story,	200.00	
Thayer,	2,800.00	
Gorham Thomas,	200.00	
Toppan,	200.00	
Townsend,	1,000.00	
Walcott,	133.34	
Christopher M. Weld,	300.00	
Amounts carried forward,	\$39,097.72	\$20,375.00

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$39,097.72	\$20,375.00
From Scholarship Funds and Gifts (<i>continued</i>).		
Jacob Wendell ,	200.00	
Whiting ,	400.00	
University, Graduate School,	3,000.00	
" Lawrence Scientific School ,	2,350.00	
Normal, " " " "	900.00	45,947.72
From Beneficiary Funds.		
Edward Austin . Appropriations, . .	\$1,030.00	
Loans to L. S. S. students,	1,594.50	
" " Special " 	263.00	\$2,887.50
Frank Bolles Memorial ,	49.00	
Moses Day ,	256.10	
Calvin and Lucy Ellis Aid ,		
Beneficiaries,	\$300.00	
Expenses,	15.00	815.00
Exhibitions,	176.42	
Price Greenleaf Aid ,	14,769.32	
Robert Keyne ,	5.60	
Munroe ,	508.16	
Palfrey Exhibition ,	80.00	
Dr. Andrew P. Peabody Memorial ,	165.00	
Quincy Tufts ,	524.28	
Stuart Wadsworth Wheeler ,	175.00	
Scholarship and Beneficiary money returned, . . .	1,714.56	
College Appropriations for L. S. S. students, . . .	450.00	22,575.94
From Prize Funds.		
James Gordon Bennett ,	\$40.00	
Bowdoin Prizes for Dissertations,	900.00	
Boylston Prizes for Elocution,	255.00	
Coolidge Debating,	200.00	
Edward Hopkins Gift for "Deturs" ,	171.74	
Sales,	45.00	
John O. Sargent ,	100.00	
George B. Schier ,	250.00	
Robert N. Toppan ,	150.00	
Philip Washburn ,	75.00	2,186.74
From Sundry Funds for Special Purposes.		
Francis James Child Memorial ,	\$473.18	
Classical Publication Fund of the Class of 1856 , .	1,067.70	
George A. Gardner ,	147.77	
Harvard Oriental Series ,	591.47	
Joseph Lovering for Physical Research , . . .	678.87	
Amounts carried forward,	\$2,958.99	\$31,085.40

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.			
Amounts brought forward,	\$2,958.99	\$91,085.40	
From Sundry Funds for Special Purposes (<i>continued</i>).			
George W. Sawin,	186.76		
John E. Thayer,	561.21		
Unknown Memorial,	1,391.84		
Cyrus M. Warren,	26.92		
Chauncey Wright,	28.22	5,153.94	
Appleton Chapel.			
Preaching and morning services,	\$3,180.00		
Organist and Choir-master,	2,000.00		
Choir,	1,600.00		
Music and binding,	529.89		
Fuel, gas, cleaning, &c.,	1,311.38		
Furniture,	38.44	8,659.71	
Jefferson Physical Laboratory.			
Spent on building, from income of Fund,	\$12.82		
Laboratory expenses,	\$3,389.21		
Less part paid by the College,	600.00	2,789.21	2,802.03
Hemenway Gymnasium.			
Salaries and wages,	\$5,277.81		
Janitors and cleaning,	2,276.58		
Fuel, water, gas, printing, and sundries,	2,047.78		
Repairs and improvements,	492.70		
Apparatus,	500.00		
Insurance,	142.97	\$10,737.74	
Less amount received from other departments,	1,341.56	9,396.18	
Botanic Garden and Botanic Museum.			
Salaries, labor, repairs, materials, &c.,	\$9,184.21		
Interest on advances,	777.46		
Cases, from gift,	49.65	10,011.32	
Gray Herbarium.			
Salary, labor, repairs, materials, interest, &c.,	\$7,761.96		
Interest on advances,	1.27	7,763.23	
Summer Schools.			
Salaries,	\$14,674.28		
Clerical services,	400.00		
Supplies, materials, cleaning, &c.,	1,310.05		
Printing,	629.89		
Advertising,	172.30		
Instruments and apparatus, . . . . .	.68		
Stationery and postage,	456.98	17,644.18	
Amount carried forward,		\$152,515.99	

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amount brought forward,		\$152,515.99	
From Special Gifts.			
For Department of Architecture, prints, casts, &c.,	\$2,513.62		
" " The Classics, books,	255.54		
" " French, books,	\$38.28		
Less College appropriations,	34.87	3.41	
For Department of Geography, lantern,	499.30		
" " German, books,	6.31		
" " History, books,	159.72		
" " Mathematics,	\$43.22		
Less amount charged to Chauncey Wright Fund,	28.22	15.00	
For Department of Music, books and music,	12.67		
" " Political Economy, books,	179.71		
" " Political Economy, apparatus,	77.75		
" " Sanskrit, services, &c.,	1,208.28		
" Mathematical publications,	100.00		
" Music 7,	87.80		
" Physical research,	173.85		
" Sugar-cane investigation,	1,458.75		
" Semitic collections,	93.50		
" Semitic Library,	87.68		
" Social Questions Library, books,	107.60	7,040.49	
Appropriations for collections, laboratories, &c.			
Anthropology (Prof. F. W. Putnam),	\$150.00		
Architecture (Prof. Warren),	250.00		
Botany (Dr. True),	150.00		
Chemistry (Prof. H. B. Hill),	500.00		
Engineering, expenses (Prof. Hollis),	7,200.00		
Fine Arts and Drawing (Prof. Moore),	300.00		
Landscape Architec., lantern slides (Instr. Olmsted),	200.00		
" " instruments (Instr. Olmsted),	50.00		
Mammal skins, installation (Dr. Woodworth),	500.00		
Metallography (Asst. Prof. Smyth),	750.00		
Mineralogy (Prof. Wolff),	200.00		
Petrography (Prof. Wolff),	100.00		
Physics (Prof. Trowbridge),	1,000.00		
Psychology (Prof. Münsterberg),	450.00		
Zoölogy (Prof. Mark),	350.00		
Zoölogy, for publications,	400.00		
Laboratory fees appropriated,	22,447.10		
Fuel and services in Nat. Hist. Laboratories,	1,500.00		
Fuel, services, &c., in Jefferson Ph. Laboratory,	600.00	37,097.10	
Amount carried forward,		\$196,653.58	

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amount brought forward,		\$196,653.58
Salaries.		
Instruction,	\$366,234.99	
Deans,	5,500.00	
Chairmen of Committees,	1,400.00	
Medical Visitor, Recorders, Secretary, Curators, &c.,	6,150.00	
Examination Proctors,	1,900.00	381,184.99
For College Buildings not valued in Treasurer's Books.		
Repairs, improvements, &c.,	\$13,830.48	
Cleaning and care,	19,588.42	
Fuel,	7,898.04	
Water,	1,289.54	
Lighting,	5,108.76	
Insurance,	1,922.42	49,637.66
General Expenses.		
Deans and Chairmen of Committees, clerical and office expenses,	\$13,433.29	
Commission on Admission to N. E. Colleges, . . .	151.43	
Reading examination books,	3,315.29	
Services of proctors,	1,147.92	
" assistants to instructors,	3,946.62	
" undergraduates,	1,108.29	
" mechanics in department of Physiology and Hygiene,	900.00	
" Head Guide in College grounds,	58.80	
Expenses of Medical Visitor,	320.45	
Attendants in department libraries and laboratories,	2,603.62	
Admission examinations,	2,753.33	
Electric power,	369.13	
Pews hired in Cambridge churches,	1,759.50	
Commencement Dinner,	631.64	
Printing office, expenses,	\$20,416.84	
Less receipts,	13,823.63	6,593.21
Printing,	243.50	
" for Graduate Department,	365.66	
Furniture,	685.11	
Stationery and postage,	1,052.99	
Books,	48.56	
Binding,	15.80	
Advertising,	1,175.86	
Watchmen,	1,278.30	
Freight, and sundries,	768.72	
Supplies, tools, and materials,	616.66	
Legal services,	118.37	
Music, Class-Day,	125.00	
Receptions,	208.23	
Amounts carried forward		\$45,795.28 \$627,476.28

TABLE NO. II, THE COLLEGE, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$45,795.28	\$627,476.33
General Expenses (<i>continued</i>).		
Use of Grays 18 by English department,	100.00	
Delegates' expenses,	18.50	
Services and expenses at Faculty meetings,	70.81	
Expenses on Annals of Mathematics,	977.10	
Telephones,	59.90	
Blank books for examinations,	814.42	
Studies and Notes in Philology and Literature, Vol. VII,	350.00	
Zoölogical laboratory contributions,	91.91	
Re-editing Suggestions for the Study of United States History,	125.00	
Chamber concerts, deficit,	30.60	
Expenses in Mining 12,	214.91	
Travelling expenses,	99.10	
Model of Metropolitan District,	349.12	49,096.65
		<u>\$676,572.88</u>

TABLE NO. III.

THE LIBRARY.

RECEIPTS.

Income of Book Funds, and Gifts and Receipts for the
purchase of books.

Nathaniel I. Bowditch,	\$101.47	
Bright ($\frac{1}{4}$ income of the Bright Legacy), . . .	1,175.00	
Edwin Conant ($\frac{1}{4}$ income),	325.92	
Constantius ($\frac{1}{4}$ income),	609.85	
Denny,	251.36	
Eliza Farrar,	249.62	
Horace A. Haven,	148.61	
Francis B. Hayes,	474.65	
George Hayward,	247.92	
Thomas Hollis,	111.44	
Sidney Homer,	101.19	
Frederick A. Lane,	250.60	
Lowell,	1,202.03	
Charles Minot,	2,861.22	
Lucy Osgood,	338.21	
Mary Osgood,	332.38	
Henry L. Pierce. Interest,	\$4,779.24	
Repayment,	94.02	4,873.26
Francis Sales,	185.70	
Stephen Salisbury,	252.91	
Amount carried forward,	\$14,093.34	

TABLE NO. III, THE LIBRARY, CONTINUED.

RECEIPTS.

Amount brought forward,	\$14,093.34	
Income of Book Funds, Gifts, etc. (<i>continued</i>).		
Sever,	944.23	
Samuel Shapleigh,	188.56	
George B. Sohler (part),	83.75	
Subscription for Library,	498.91	
Charles Sumner,	1,765.70	
Kenneth Matheson Taylor,	239.14	
Ichabod Tucker,	210.48	
James Walker,	746.78	
Thomas W. Ward,	250.88	
Executors of Robert Waterston (balance), . .	12.69	
J Huntington Wolcott,	652.27	
Gifts for books,	5,520.00	
	<u>\$25,206.73</u>	
Sales of duplicate books,	194.48	
Received for books lost,	44.25	
Fines,	344.00	\$25,789.46
Income of Funds for general purposes.		
Daniel Austin,	\$292.81	
Edwin Conant ($\frac{1}{4}$ income),	977.77	
Constantius ($\frac{1}{4}$ income),	609.85	
Fund of the Class of 1851 (accumulating), . .	25.05	
“ “ “ (C. F. Dunbar's Gift),	24.67	
Price Greenleaf,	16,134.28	
Jarvis,	23.50	
James Savage ($\frac{1}{4}$ net income),	1,255.50	
Daniel Treadwell,	560.47	
Eben Wright,	4,700.00	24,608.90
Fees for use of Library	\$70.00	
Sale of Scudder catalogues,	24.00	
Sale of Index Subject Catalogues,	6.68	
Part of receipts on account of stolen book-plates, . . .	177.30	277.98
		<u><u>\$50,671.34</u></u>

PAYMENTS.

For Books, from the following Funds, Gifts, etc.	
Bowditch,	\$138.14
Bright,	1,102.58
Conant,	280.53
Constantius,	582.92
Denny,	290.52
Farrar,	251.24
Haven,	114.90
Hayes,	493.68
Hayward,	224.24
Hollis,	109.82
Amount carried forward,	\$3,588.57

TABLE NO. III, THE LIBRARY, CONTINUED.

PAYMENTS.

Amount brought forward,	\$3,588.57	
For Books, from the following Funds, Gifts, etc. (<i>confd</i>).		
Homer,	106.70	
Lane,	262.75	
Lowell,	742.19	
Minot,	3,012.81	
Lucy Osgood,	353.47	
Mary Osgood,	363.91	
Pierce,	5,558.72	
Sales,	194.81	
Salisbury,	326.20	
Sever,	896.01	
Shapleigh,	200.12	
Sohier,	110.39	
Subscription Fund,	531.51	
Sumner,	1,712.67	
Taylor,	213.98	
Tucker,	165.41	
Walker,	734.69	
Ward,	289.01	
Waterston,	46.31	
J. Huntington Wolcott,	657.63	
A. C. Coolidge Gift,	3,391.09	
Harold J. Coolidge Gift,	50.00	
J. Randolph Coolidge Gift,	64.04	
Mrs. J. R. Coolidge Gift,	11.93	
Dante Society Gift,	23.88	
H. H. Furness Gift,	8.81	
Gardner Gift,	7.73	
Gifts for David Garrick portraits,	281.00	
Hammer Gift,	446.15	
Loeb Gift,	9.50	
Duplicate money,	444.14	
Fines,	815.89	\$25,121.97
Salaries,	\$15,220.83	
Services and wages,	17,738.44	
Repairs and improvements,	479.37	
Janitors and cleaning,	953.52	
Fuel,	1,055.71	
Water,	80.86	
Lighting,	1,072.56	
Printing,	1,548.76	
Furniture,	298.63	
Stationery and postage,	573.90	
Binding,	2,605.56	
Electric power,	116.24	
Freight, supplies, and sundries,	831.51	42,525.89
		\$67,647.86

TABLE No. IV.
DIVINITY SCHOOL.

RECEIPTS.

Income of Funds for Instruction, or for general purposes.

Divinity School (balance),	\$1,815.81	
New Endowment,	8,357.07	
Oliver Ames,	799.00	
Hannah C. Andrews,	24.67	
Daniel Austin,	41.83	
Adams Ayer,	47.00	
Joseph Baker,	370.13	
Beneficiary money returned (balance),	212.35	
Bussey Professorship,	1,766.45	
Benjamin Bussey Trust ($\frac{1}{4}$ net income),	8,947.38	
Joshua Clapp,	102.36	
Edwin Conant,	235.00	
Dexter Lectureship,	953.16	
Frothingham Professorship,	2,077.92	
Abraham W. Fuller,	49.35	
Lewis Gould,	42.82	
John Hancock Professorship,	\$282.38	
C. L. Hancock,	<u>3,924.48</u>	4,206.81
Haven,	235.00	
Samuel Hoar,	49.35	
Henry P. Kidder,	470.00	
Henry Lienow,	481.70	
Caroline Merriam,	49.35	
Parkman Professorship,	752.75	
John W. Quinby,	20.68	
Abby Crocker Richmond,	47.00	
John L. Russell,	47.00	
William B. Spooner,	470.00	
Thomas Tileston of New York Endowment,	1,880.00	
Mary P. Townsend,	246.75	
Winthrop Ward,	98.70	
Winn Professorship,	<u>2,507.26</u>	\$26,854.64

Income of Scholarship and Beneficiary Funds.

Abner W. Buttrick,	\$609.31	
Thomas Cary,	245.53	
George Chapman,	124.50	
Joshua Clapp,	205.53	
Jackson Foundation,	680.14	
J. Henry Kendall,	246.70	
Nancy Kendall,	159.28	
William Pomroy,	<u>49.35</u>	2,320.34

Amount carried forward, \$29,174.98

TABLE NO. IV, DIVINITY SCHOOL, CONTINUED.

RECEIPTS.

Amount brought forward,		\$29,174.98
Income of Book Funds.		
Rushton Dashwood Burr,	\$165.72	
Louisa J. Hall,	30.98	196.65
Term Bills.		
Instruction,	\$4,056.50	
Receipts from Divinity Hall and house,	2,955.63	\$7,012.13
Summer School fees,		1,835.00
Gift from Society for Promoting Theological Education,		3,704.05
Sale of duplicate books, &c.,		13.84
" tickets to Alumni Dinner,		53.00
" catalogues,		23.10
Fines,	7.45	12,148.07
		<u>\$41,519.70</u>

PAYMENTS.

From Scholarship Funds.		
George Chapman,	\$100.00	
Joshua Clapp,	180.00	
Jackson,	320.00	
J. H. Kendall,	200.00	
Nancy Kendall,	140.00	940.00
From Beneficiary Funds.		
Abner W. Buttrick,	\$535.00	
William Pomroy,	47.80	582.88
From Book Funds.		
Louisa J. Hall, . . . . .		.43
Salaries for instruction,	\$25,627.65	
" " Summer School,	1,473.83	
Secretary and Librarian,	1,500.00	
Services and wages,	261.26	
Library Assistants,	1,156.97	
Labor, repairs, and improvements,	514.66	
Cleaning and care of rooms,	1,373.66	
Fuel,	558.80	
Water,	83.53	
Lighting,	360.00	
Printing,	233.57	
Furniture,	150.49	
Stationery and postage,	158.46	
Books,	769.95	
Binding,	60.25	
Insurance,	45.00	
Amounts carried forward,	\$34,328.08	\$1,523.31

TABLE NO. IV, DIVINITY SCHOOL, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$34,828.08	\$1,523.31
Advertising,	584.88	
Diplomas and sundries,	89.65	
Taxes on Chelsea Real Estate,	39.56	
Alumni dinner,	61.00	
Proportion of expenses of Gymnasium,	55.66	
Installing, tuning, and repairs, new organ,	411.57	
American School for Oriental study and research in Palestine (1st payment),	100.00	
Subscription to the Fellowship in Christian Archaeology in the American School of Classical Studies in Rome,	50.00	
Drawings and estimates for alterations of Library building,	150.00	
Appraisal of C. L. Hancock real estate,	100.00	35,969.90
		<u>\$37,493.21</u>

TABLE NO. V.
LAW SCHOOL.

RECEIPTS.

Income of Funds.		
Law School, balance,	\$6,118.27	
James Barr Ames Prize,	163.52	
Bemis Professorship,	3,083.39	
Benjamin Bussey Professorship,	1,127.06	
Benjamin Bussey Trust ($\frac{1}{4}$ net income),	3,947.38	
Nathan Dane Professorship,	740.25	
John Foster, income for Law Students every second year,	149.04	
Law School Book,	2,209.99	
Law School Library,	4,700.00	
Isaac Royall Professorship,	392.03	
Weld "	4,464.76	
Scholarship money returned,	56.87	\$27,152.56
Term Bills, instruction,	\$95,525.00	
Sale of Law School Quinquennial Catalogue,	4.65	
" books,	55.75	95,585.40
		<u><u>\$122,737.96</u></u>

PAYMENTS.

Salaries for instruction,	\$49,133.33
Librarian and Assistants,	6,820.23
Secretary,	1,000.00
Amount carried forward,	\$56,953.56

TABLE NO. V, LAW SCHOOL, CONTINUED.

PAYMENTS.

Amount brought forward,	\$56,953.56	
Reader to the Dane Professor,	464.29	
Services of proctors,	551.25	
Scholarships,	3,100.00	
Repairs and improvements,	862.64	
Janitor, cleaning, &c.,	1,495.56	
Fuel,	954.02	
Water,	40.66	
Lighting,	1,410.72	
Printing,	336.36	
Furniture,	215.86	
Stationery and postage,	563.21	
Books,	11,884.67	
Binding,	2,666.13	
Advertising,	216.26	
Freight, diplomas, and sundries,	874.45	
Proportion of expenses of Gymnasium,	1,285.90	
Insurance,	57.00	
Travelling expenses,	55.82	
Electric power,	50.00	
Legal services,	66.88	
Catalogue,	222.35	
Electric light wiring and supervision,	2,009.36	
Electric light fixtures,	2,518.70	
Picture frames,	238.68	
Restoring portraits,	115.00	\$89,208.88

TABLE NO. VI.

MEDICAL SCHOOL.

RECEIPTS.

Income of Funds for Instruction, or for general purposes.

Medical School, balance,	\$2,668.57
Edward M. Barringer (part),	699.11
John B. and Buckminster Brown ,	873.82
Caroline Brewer Croft (part),	1,500.00
Calvin Ellis ,	12,288.64
Lucy Ellis ,	2,389.57
George Fabyan (part),	4,000.00
Samuel E. Fitz ,	86.29
Henry Harris ($\frac{1}{2}$ income),	703.57
Hersey Professorship ($\frac{2}{3}$ income),	380.08
Jackson ,	902.07

Amount carried forward, \$26,491.72

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

RECEIPTS.

Amount brought forward,	\$26,491.72	
Income of Funds for Instruction, or for general purposes (<i>continued</i>).		
William O. Moseley,	2,486.30	
New subscription,	1,821.25	
Dr. Ruppenner,	438.79	
George C. Shattuck,	828.28	
Mary W. Swett,	740.95	
Samuel W. Swett,	940.00	
Quincy Tufts,	94.00	
Henry Willard Williams,	1,552.36	\$35,393.65
Income of Fellowship Funds.		
Edward Austin (part) Teaching,	\$2,500.00	
George Cheyne Shattuck Memorial,	247.64	
Charles Eliot Ware "	260.33	
John Ware "	245.90	3,253.87
Income of Scholarship Funds.		
Edward M. Barringer (part),	\$500.00	
Lucius F. Billings,	225.22	
David Williams Cheever,	267.52	
Cotting Gift,	144.29	
Orlando W. Doe,	126.85	
Joseph Eveleth (part),	600.00	
Lewis and Harriet Hayden,	272.98	
William Hilton (part),	450.00	
C. M. Jones,	292.48	
Alfred Hosmer Linder,	247.50	
Charles B. Porter,	256.76	
Charles Pratt Strong,	202.29	
Isaac Sweetser,	293.80	
John Thomson Taylor,	243.84	
Edward Wigglesworth,	248.44	4,371.97
Income of Prize Funds.		
Ward Nicholas Boylston,	\$163.42	
William H. Thorndike,	278.76	442.18
Income of Sundry Funds for special purposes.		
Edward Austin (part),	\$300.00	
Edward Austin (Bacteriological Laboratory), .	475.40	
J. Ingersoll Bowditch,	284.12	
Ward Nicholas Boylston, for Medical Books,	150.64	
Caroline Brewer Croft (part),	811.25	
George Fabyan (part). Interest, . . \$741.03		
Gift, 25.00	766.03	
Amounts carried forward,	\$2,787.44	\$43,461.

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$2,787.44	\$43,461.67
Income of Sundry Funds for special purposes (<i>cont'd</i>).		
Medical Library,	72.04	
Gifts for Pathological Department Library,	61.78	
Surgical Laboratory. Interest,	\$320.54	
Gifts,	400.00	720.54
F. B. Greenough (surgical research),	19.60	
Warren Fund for Anatomical Museum,	661.14	4,322.54
Gifts for present use,		1,938.00
Term Bills.		
Instruction,	\$105,869.00	
Graduation fees,	3,450.00	
Matriculation fees,	970.00	
Examination fees,	483.00	
Admission Chemistry, fees,	820.00	
Operative Surgery, fees,	218.00	
Embryology, fees,	786.60	
Bandaging, fees,	84.75	
Chemistry, breakage and chemicals,	2,070.25	
Physiology, material,	841.32	
Practical Anatomy, material,	1,494.00	117,081.92
Graduate courses, fees,	\$1,065.00	
Summer " "	4,181.71	5,246.71
From Dental School, for laboratory instruction,	\$4,100.00	
Repayment of advances for the purchase of microscopes, .	1,608.30	
Sale of barrels,	9.00	5,717.30
		<u>\$177,768.14</u>

PAYMENTS.

From Fellowship Funds.		
Edward Austin, Teaching,	\$2,500.00	
George Cheyne Shattuck Memorial,	225.00	
Charles Eliot Ware Memorial,	135.00	
John Ware Memorial,	225.00	\$3,085.00
From Scholarship Funds.		
Edward M. Barringer,	\$500.00	
Lucius F. Billings,	200.00	
David Williams Cheever,	250.00	
Cotting Gift,	125.00	
Orlando W. Doe,	60.00	
Joseph Eveleth,	600.00	
John Foster, income for Medical Students (bal.), . .	90.00	
Lewis and Harriet Hayden,	262.98	
William Hilton,	450.00	
C. M. Jones,	150.00	
Amounts carried forward,	\$2,687.98	\$3,085.00

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED.

PAYMENTS.		
Amounts brought forward,	\$2,687.98	\$8,085.00
From Scholarship Funds (continued).		
Alfred Hosmer Linder,	280.00	
Charles B. Porter,	200.00	
Charles Pratt Strong,	100.00	
Isaac Sweetser,	250.00	
John Thomson Taylor,	200.00	
Edward Wigglesworth,	280.00	
Faculty Scholarships,	640.00	4,637.98
From Prize Funds.		
Ward Nicholas Boylston. Prize,	\$100.00	
Advertising,	12.50	112.50
From Sundry Funds and Gifts for special purposes.		
Edward Austin (Bacteriological Laboratory), .	\$109.08	
" " (Embryological Collection), . .	300.00	
J. Ingersoll Bowditch,	166.06	
Ward Nicholas Boylston for Medical Books,	322.95	
Caroline Brewer Croft (part),	649.70	
George Fabyan (part),	300.52	
Gifts for Pathological Department Library,	1,236.52	
Surgical Laboratory,	1,471.41	
Warren Fund for Anatomical Museum,	387.62	
Sundry Gifts,	765.52	5,709.33
Appropriations.		
Anatomy,	\$3,250.00	
Bacteriology,	600.00	
Chemistry,	1,980.56	
Clinical Medicine,	325.00	
Clinical Surgery,	100.00	
Gynaecology,	50.00	
Histology and Embryology,	1,586.60	
Hygiene,	200.00	
Museum,	312.00	
New courses,	1,600.00	
Obstetrics,	250.00	
Pathology,	800.00	
Pharmacology and Therapeutics,	700.00	
Physiology,	2,961.32	
Surgery,	584.75	
Theory and Practice,	500.00	15,800.23
Graduates courses, fees repaid to Instructors,	\$1,065.00	
Summer " " " "	4,695.00	5,760.00
Salaries for instruction,		100,391.64
Dental School, for laboratory instruction,		820.00
Amount carried forward,		\$186,316.68.

TABLE NO. VI, MEDICAL SCHOOL, CONTINUED

PAYMENTS.

Amount brought forward,		\$136,316.68
General Expenses.		
Dean, and Secretary,	\$800.00	
Clerical services,	1,730.00	
Repairs and improvements,	2,720.06	
Janitor and cleaning,	5,165.68	
Fuel,	1,705.10	
Water,	1,008.00	
Lighting and gas,	3,005.92	
Printing,	297.83	
Furniture,	268.99	
Instruments and apparatus,	15.00	
Stationery and postage,	582.09	
Advertising and catalogues,	1,800.00	
Insurance,	761.00	
Proctors,	400.00	
Mechanics and laboratory attendants,	7,875.04	
Legal services,	71.67	
Electric power,	1,192.41	
Freight, diplomas, and sundries,	602.83	
Supplies and material,	1,990.58	
Typewriters,	87.50	
Services on account of new buildings,	117.64	31,697.34
		<u>\$168,014.02</u>

TABLE NO. VII.
DENTAL SCHOOL.

RECEIPTS.

Income of Funds.			
Dental School, balance,	\$1,564.30		
Dental School Endowment,	106.03		
Henry C. Warren Endowment,	1,081.00		
Gifts for new building,	849.01	\$3,600.34	
Term bills for instruction,	\$19,549.50		
Chemistry, breakage and chemicals,	335.95		
Examination fees,	115.00	20,000.45	
From Veterinary School, for laboratory instruction, . .	\$140.00		
From Medical School, " " . .	820.00		
Fees from infirmary,	5,881.89		
" laboratory,	2,176.55		
Repayment of advances for the purchase of microscopes, .	99.00		
Sale of sweepings,	374.01		
" scrap platinum,	112.00	9,608.45	
		<u>\$33,204.34</u>	

TABLE No. VII, DENTAL SCHOOL, CONTINUED.

PAYMENTS.

Salaries for instruction,	\$12,605.00	
Medical School, for instruction,	4,100.00	
Curator and Librarian,	150.00	
Secretary,	275.00	
Proctors,	156.00	
Repairs and improvements,	394.11	
Janitors and cleaning,	1,545.44	
Fuel,	171.25	
Water,	135.70	
Lighting,	429.10	
Printing,	477.21	
Furniture,	1.45	
Instruments and apparatus,	309.02	
Stationery and postage,	378.53	
Books,	9.09	
Binding,	27.95	
Advertising,	630.63	
Services and wages,	1,354.57	
Supplies, etc.,	4,093.83	
Freight and sundries,	671.58	
Chemical apparatus,	150.00	
Delegates' expenses,	82.80	
Bacteriology,	100.00	
Models of teeth development,	30.00	\$28,268.25

TABLE No. VIII.

MUSEUM OF COMPARATIVE ZOOLOGY.

RECEIPTS.

Income of Funds.

Museum of Comparative Zoölogy (balance), . . .	\$1,376.73	
Agassiz Memorial,	14,002.85	
Teachers and Pupils,	356.92	
Virginia Barret Gibbs Scholarship,	257.84	
Gray Fund for Zoölogical Museum,	2,350.00	
Sturgis Hooper,	5,066.27	
Humboldt,	363.83	
Willard Peele Hunnewell,	39.15	
Permanent Fund for Museum of Zoölogy,	5,521.04	
Henry L. Pierce,	4,700.00	\$34,084.62
Gifts for a Collection of Mammal Skins,	2,720.00	
Use of lecture rooms by Radcliffe College,	700.00	
		<u>\$37,454.62</u>

TABLE NO. VIII, MUSEUM OF COMPARATIVE ZOOLOGY, CONTINUED.

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.

Agassiz Memorial ,	\$14,002.85	
Teachers and Pupils ,	356.92	
Gray ,	2,350.00	
Humboldt ,	363.83	
William Peele Hunnewell ,	89.15	
Permanent ,	5,521.04	
Henry L. Peirce ,	4,323.22	\$26,957.01
Virginia Barret Gibbs Scholarship ,	\$166.66	
Sturgis Hooper, salary ,	5,415.36	5,582.02
Gifts for a Collection of Mammal Skins ,		5,012.65
		<u>\$37,551.68</u>

TABLE NO. IX.

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY
AND ETHNOLOGY.

RECEIPTS.

Income of Funds.

Hemenway Fellowship ,	\$528.52	
Peabody Building ,	1,413.94	
Peabody Collection ,	2,360.29	
Peabody Professor ,	2,360.29	
Thaw Fellowship ,	1,150.05	
Henry C. Warren Exploration ,	481.94	
Robert C. Winthrop Scholarship ,	247.22	
Huntington Frothingham Wolcott ,	646.25	\$9,188.50
Gifts for present use ,		550.00
		<u>\$9,738.50</u>

PAYMENTS.

Paid on the order of the Faculty of the Peabody Museum, from the following Funds, gifts and advances.

Peabody Building ,	\$1,413.94	
Peabody Collection ,	2,360.29	
Henry C. Warren Exploration ,	435.00	
Huntington Frothingham Wolcott ,	585.00	
Gifts ,	550.00	
Advances from general investments ,	968.29	\$6,312.52
Hemenway Fellowship ,	\$425.00	
Peabody Professor ,	2,320.93	
Thaw Fellowship ,	1,136.03	
Robert C. Winthrop Scholarship ,	200.00	4,081.96
		<u>\$10,894.48</u>

TABLE No. X.
OBSERVATORY.

RECEIPTS.

Income of Funds.

Observatory (balance),	\$105.70	
Advancement of Astronomical Science,	88.55	
Thomas G. Appleton,	235.00	
J Ingersoll Bowditch,	117.50	
Uriah A. Boyden,	9,437.74	
Charlotte Harris,	94.00	
Haven,	2,115.00	
James Hayward,	987.00	
Observatory Endowment,	2,350.00	
Paine Professorship,	2,350.00	
Robert Treat Paine,	12,857.23	
Edward B. Phillips,	5,183.82	
Josiah Quincy,	525.79	
James Savage ($\frac{1}{4}$ net income),	418.50	
David Sears,	1,637.81	
Augustus Story	628.86	\$39,132.50
<hr/>		
Mrs. Henry Draper, gift for special re- search (additional,	\$9,999.96	
Interest on unexpended balance,	45.40	\$10,045.36
Trustees of Sturgis Fund, on account of printing Annals,	2,140.26	
Use of house by College officer,	600.00	
Sale of Annals,	116.00	
" lantern slides,	4.50	
" telegraphic code-book,	4.50	12,910.62
		<hr/>
		<u>\$52,043.12</u>

PAYMENTS.

From Uriah A. Boyden Fund, supplies, apparatus, services, &c.,	\$11,274.61	
" Draper Memorial, supplies, apparatus, services, &c.,	8,012.13	
Salaries,	\$13,500.00	
Services and wages,	6,832.67	
Repairs and improvements,	1,303.68	
Cleaning and care of Observatory,	523.36	
Labor,	1,336.50	
Fuel,	297.35	
Water,	36.92	
Lighting,	121.47	
Printing,	2,586.70	
Furniture,	309.91	
Instruments and apparatus, including repairs on same,	951.70	
Stationery, postage, and telegraphing,	821.45	
		<hr/>
Amounts carried forward,	\$28,621.71	\$19,236.74

TABLE No. X, OBSERVATORY, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$28,621.71	\$19,286.74
Books,	396.48	
Binding,	374.29	
Insurance,	20.24	
Supplies and materials,	1,312.98	
Freight, chemicals, and sundries,	361.08	
Use of house,	90.00	
Electric power,	106.55	
Jamaica Expedition expenses,	2,000.00	33,283.33
		<u>\$52,570.07</u>

TABLE No. XI.

BUSSEY INSTITUTION.

RECEIPTS.

Income of Funds.		
Bussey Institution (balance),	\$1,147.88	
Bussey Trust ($\frac{1}{2}$ net income),	7,894.76	
Woodland Hill,	514.27	\$9,556.91
Fees for instruction,	\$2,610.00	
Sale of wood, hay, and sundries,	178.35	
Horticultural Departm't, prizes, sale of flowers, plants, &c.,	1,747.11	
Board of horses, cattle, &c.,	6,033.44	
Use of house by College officer,	600.00	11,168.90
		<u>\$20,725.81</u>

PAYMENTS.

Salaries,	\$6,950.00	
Services and wages,	3,044.92	
Repairs and improvements,	464.69	
Fuel,	316.00	
Gas,	47.40	
Water,	20.00	
Printing,	128.75	
Books,	136.48	
Binding,	47.00	
Insurance,	26.04	
Horticultural Department, expenses,	1,945.13	
Grain, farming tools, &c.,	2,301.72	
Sundries,	76.26	
New greenhouses,	2,454.34	\$17,958.72

TABLE No. XII.
ARNOLD ARBORETUM.

RECEIPTS.			
Income of Funds.			
Arnold Arboretum,	\$1,731.81		
James Arnold,	7,453.02		
William L. Bradley,	1,042.60		
Gifts for construction,	419.52	\$10,646.95	
Interest on deposit,	\$10.54		
Sale of grass and materials,	1,251.29		
Gifts for present use,	2,500.00	3,761.83	
		<u>\$14,408.78</u>	
PAYMENTS.			
William L. Bradley Fund, bibliography,	\$964.06		
Salary of Director and Assistant,	3,500.00		
Expenses of Arboretum, services, labor, &c.,	13,713.56		
Specimens and expenses for Herbarium and Museum,	1,084.21	\$19,261.83	

TABLE No. XIII.
SCHOOL OF VETERINARY MEDICINE.

RECEIPTS.			
Term Bills.			
Instruction,	\$2,640.00		
Pharmacology, material,	25.82	\$2,665.82	
Fees from Hospital and Forge,	\$10,167.10		
Interest on deposit,	5.77		
Subscriptions to Hospital,	20.00		
Gift for Pathological Laboratory, interest,	101.30		
Sale of hay and straw,	101.93		
Fees for use of microscopes,	34.00	10,430.10	
		<u>\$13,095.92</u>	
PAYMENTS.			
Salaries for instruction,	\$6,507.50		
Dental School, "	140.00		
Assistance at free clinic,	101.68		
Laboratory assistant,	70.00		
Clerk,	350.00		
Stenographer,	203.00		
Services and wages,	4,254.81		
Proctors,	21.00		
Scholarships,	290.00		
Repairs and improvements,	595.71		
Amount carried forward,	\$12,533.70		

TABLE NO. XIII, SCHOOL OF VETERINARY MEDICINE, CONTINUED.

PAYMENTS.

Amount brought forward,	\$12,533.70	
Fuel,	283.42	
Water,	60.45	
Lighting,	306.65	
Printing,	29.05	
Furniture,	35.30	
Instruments and apparatus,	53.96	
Stationery, postage, telephone, &c.,	421.08	
Advertising,	288.67	
Taxes,	299.07	
Hay, grain, supplies, &c.,	4,144.69	
Freight, diplomas, and sundries,	294.73	
Interest on advances,	1,220.30	
Rent,	1,480.00	\$21,451.07

TABLE NO. XIV.

MISCELLANEOUS FUNDS.

Sundry Funds for Special Purposes.

<i>Receipts.</i>		
Income of Funds.		
Anonymous,		\$242.19
Edward Austin. Interest,	\$21,627.05	
Loans repaid,	103.10	
	\$21,730.15	
Less approp'ns as per tables II and VI, 17,020.83		4,709.32
Bussey Trust, net income from Real Estate, . .		19,789.52
Class of 1834,		47.52
“ 1844,		274.29
“ 1853,		149.00
Caroline Brewer Croft (part),		2,048.05
Calvin and Lucy Ellis Aid (part),		199.51
Free Bed Fund of the Class of 1868,		175.78
“ “ for Stillman Infirmary,		14.66
Gifts for additions to The Soldier's Field, \$5,000.00		
Interest,	47.77	5,047.77
Gifts for Cuban Teachers,	\$894.61	
Interest,	215.24	1,109.85
Gift for The Harvard Union,	\$10,000.00	
Interest,	96.11	10,096.11
Gifts for Land in New Hampshire,	\$10,200.00	
Interest,	58.15	10,258.15
Gospel Church ($\frac{1}{4}$ income),		141.80
Gurney (part),		1,000.00
Amount carried forward,		\$55,308.52

TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Funds for Special Purposes (*continued*).*Receipts.*

Amount brought forward,	\$55,303.52	
Harvard Memorial Society,	59.78	
Robert Troup Paine (accumulating),	1,839.40	
Professorship of Hygiene (part),	2,000.00	
John W. and Belinda L. Randall,	248.96	
School of Comparative Medicine,	194.02	
Sundry balances,	1,818.20	
Alexander W. Thayer (part),	480.00	
Henry P. Walcott,	24.49	
Charles Wilder,	1,279.10	
Daniel Williams,	768.36	
Sarah Winslow,	224.80	
Woodland Hill,	514.27	\$68,754.90

*Payments.***From the following Funds and Gifts.**

Anonymous, annuity,	\$200.00	
Bussey Trust. Annuities,	\$4,000.00	
One half of the remaining income to the Bussey Institution,	7,894.76	
One quarter to the Divinity School,	3,947.38	
One quarter to the Law School,	3,947.38	19,789.52
Class of 1853, to the Secretary,		149.00
Caroline Brewer Croft, annuity,		2,048.05
Calvin Ellis, legal expenses,		901.64
Calvin and Lucy Ellis Aid, legal expenses,		451.51
Lucy Ellis, legal expenses,		173.27
Gifts for Cuban Teachers, expenses,		58,871.48
Gifts for land in New Hampshire,		6,850.00
Gurney, annuities,		1,000.00
Harvard Memorial Society, Treas. of Society,		71.87
Professorship of Hygiene, annuity,		2,000.00
John W. and Belinda L. Randall, Student Volunteer Committee,		200.00
Alexander Wheelock Thayer, annuity,		480.00
Charles Wilder, annuity,		256.50
Daniel Williams, Treasurer of Mashpee Indians,	\$497.26	
" " Herring Pond Indians,	248.62	745.88
Sarah Winslow, Minister at Tyngsborough, Mass.,	\$106.35	
Teacher at " "	106.35	
Commission on income, credited to Univ.,	5.62	218.32
Woodland Hill, Taxes and legal services,	\$1,080.11	
Bussey Institut'n, income transferred,	514.27	1,594.38
		\$96,001.42

TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

Construction Accounts.*Receipts.*

Architecture Building. Gift,	\$30,000.00	
Interest,	8,154.61	
Income of Nelson Robinson Jr.		
Endowment,	11,227.62	
Repayment,	127.52	\$44,509.75
Brighton Marsh Fence, interest,		145.54
New Boat House. Gifts,	\$3,500.00	
Interest,	128.57	2,628.57
Pierce Hall. Gift,	\$3,000.00	
Interest,	5,339.56	8,339.56
Semitic Building. Gift,	\$30,000.00	
Interest,	1,895.08	21,895.08
John Simpkins Hall, interest,		106.19
Stillman Infirmary, interest,		2,525.21
University Museum, interest,		3,138.82
		\$85,288.67

Payments.

For Architecture Building,	\$109,175.71	
“ Brighton Marsh Fence,	29,627.63	
“ New Boat House,	25,414.61	
“ Pierce Hall,	138,409.56	
“ Randall Hall. Advances from gen'l investments,	11,155.56	
“ Rotch Laboratory addition,		
Advances from general investments,	6,637.62	
“ Semitic Building,	35,391.79	
“ John Simpkins Hall,	11,739.34	
“ Stillman Infirmary,	67,385.70	
“ University Museum,	60,222.79	495,160.31

Sundry Accounts.*Receipts.*

Bursar's Sundry Accounts,	\$526,790.22	
Advances from General Investments to		
Botanic Department,	\$3,076.28	
Peabody Museum of American Archae-		
ology and Ethnology,	968.29	
Randall Hall,	11,155.56	
Rotch Laboratory,	6,637.62	21,837.75
Gains from change of Special Investments,		
Calvin Ellis Fund,	\$142.75	
Calvin and Lucy Ellis Aid Fund,	133.49	
Henry C. Warren Fund,	470.62	746.86
Amount carried forward,	\$549,374.33	

TABLE NO. XIV, MISCELLANEOUS FUNDS, CONTINUED.

Sundry Accounts (continued).*Receipts.*

Amount brought forward,	\$549,874.83	
School of Veterinary Medicine, from University Account to pay deficit of 1900-01,	8,456.45	
William Hayes Fogg Fund, Sundry expenses of former years, repaid by the University,	3,080.98	
Transfers to		
Gifts for Construction (Arnold Arbore- tum), from Arnold Arboretum Fund , \$15,000.00		
Lowell Memorial Library , from E. S. .		
Sheldon's Gift ,	45.00	
Henry L. Pierce Building Fund , from Henry L. Pierce Residuary Bequest,	27,100.00	
Henry L. Pierce Residuary Bequest , from Henry L. Pierce Fund (Mu- seum of Comparative Zoölogy), . . .	100,000.00	142,145.00
		<u>\$708,007.26</u>

Payments.

Bursar's Sundry Accounts ,	\$515,973.90	
Advances from General Investments , repaid by		
Francois James Child Memorial Fund,	\$10.21	
Gray Herbarium ,	25.41	
Henry Warren Torrey Fund , . .	110.62	146.24
Losses from change of Special Investments.		
Calvin Ellis Fund ,	\$1,851.34	
Henry C. Warren Fund ,	1,486.40	3,337.74

Transfers from

Arnold Arboretum Fund , to Gifts for Construction (Arnold Arboretum), .	\$15,000.00	
Henry L. Pierce Residuary Bequest , to Henry L. Pierce Building Fund , .	27,100.00	
Henry L. Pierce Fund (Museum of Comparative Zoölogy), to Henry L. Pierce Residuary Bequest ,	100,000.00	
E. S. Sheldon's Gift , to Lowell Memorial Library,	45.00	142,145.00
		<u>\$661,601.88</u>

GENERAL SUMMARY OF THE TABLES.

Table.	Receipts.	Payments.
I. University,	\$92,810.33	\$110,276.94
II. College,	751,625.15	676,572.88
III. Library,	50,671.34	67,647.86
IV. Divinity School,	41,519.70	37,493.21
V. Law School,	122,737.96	89,208.83
VI. Medical School,	177,768.14	168,014.02
VII. Dental School,	33,204.24	28,268.25
VIII. Museum of Comparative Zoölogy,	37,454.62	37,551.68
IX. Peabody Museum of American Archae- ology and Ethnology,	9,738.50	10,394.48
X. Observatory,	52,043.12	52,570.07
XI. Bussey Institution,	20,725.81	17,958.72
XII. Arnold Arboretum,	14,408.78	19,261.83
XIII. School of Veterinary Medicine,	13,095.92	21,451.07
XIV. { Sundry Funds for Special Purposes, . . .	63,754.90	96,001.42
{ Construction Accounts,	83,288.67	495,160.31
{ Sundry Accounts,	703,007.26	661,601.88
	\$2,267,854.44	\$2,589,433.45
		2,267,854.44
Balance,		\$321,579.01

Which is the net decrease of the Funds and balances, excluding gifts for capital account, as also shown on page 54. This decrease is more than covered by payments on account of the construction of buildings, in excess of receipts therefor in the current year.

Certificate of the Committees of the Corporation and Overseers of Harvard College, for examining the Accounts of the Treasurer.

The committees appointed by the Corporation and Overseers of Harvard College to examine the accounts of the Treasurer for the year ending July 31, 1901, have, with the assistance of an expert chosen by them, examined and audited the Cash-book and Journal covering the period from August 1, 1900, to July 31, 1901, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were on hand at the beginning of said year, or have been received by him during said year, are now in his possession, or are fully accounted for by entries made therein; they have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

They have in like manner satisfied themselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

They have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

HENRY P. WALCOTT,	}	<i>Committee on the part of the Corporation.</i>
ARTHUR T. CABOT,		

F. L. HIGGINSON,	}	<i>Committee on the part of the Board of Overseers.</i>
MOSES WILLIAMS,		
ALFRED BOWDITCH,		
WILLIAM C. ENDICOTT,		
STEPHEN M. WELD,		

Boston, December 27, 1901.

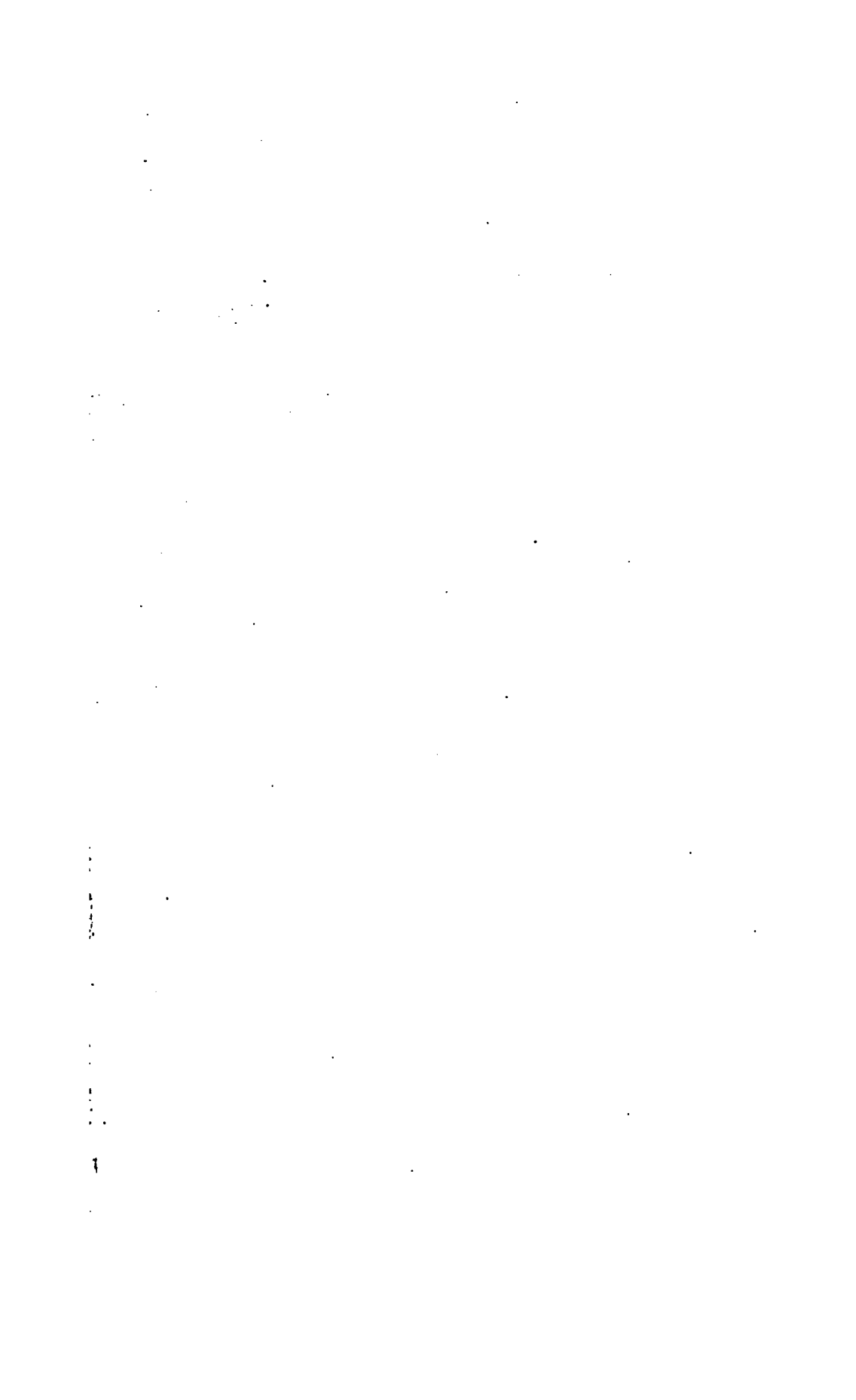
THE UNIVERSITY PUBLICATIONS

*[Entered at the Post-office, Boston, Mass., as Second Class matter, April 8, 1902.
Act of July 16, 1894.]*

Issued twice a month from September to April inclusive, and
six times a month from May to August inclusive.

These publications include :—

The Annual Reports of the President and of the Treasurer
The Annual University Catalogue
The Annual Catalogues of the College and the several Professional Schools of the University; the Announcements of the several Departments; etc., etc.





**This book is under no circumstances to be
taken from the Building**

[illegible]



